nForce 680i SLI/ nForce 680i LT SLI

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Ver: EG101

nForce 680i SLI/ nForce 680i LT SLI

nVIDIA® nForce 680i SLI MCPs/ nForce 680i LT SLI MCPs

Support Socket 775
Intel® Core™ 2 Extreme/ Core™ 2 Quad/ Core™ 2 Duo/ Pentium® Extreme Edition/ Pentium® Processors

User Manual

Dimensions (ATX form-factor):

- 244mm x 305mm (W x L)

Operating System:

- Windows® Vista/ Windows® XP

Things You Have To Know

- The images and pictures in this manual are for reference only and may vary from the product you received depending on specific hardware models, third party components and software versions.
- This mainboard contains very delicate IC chips. Always use a grounded wrist strap when working with the system.
- Do not touch any IC chip, lead, connector or other components.
- Always unplug the AC power when you install or remove any device on the mainboard or when confuguring pins and switches.

Packing List

- nForce 680i SLI/ nForce 680i LT SLI Mainboard
- I/O Shield
- IDE Cable
- SATA Cable
- SLI Bridge
- 1394 Cable (Optional)
- Cooling Fan (nForce 680i SLI only)
- Mainboard Driver & User Manual CD
- Mainboard Quick Installation Guide

Symbols

Attention- Important Information

Follow the procedures below…

Troubleshooting Tips

Refer to other sections in this manual…

Table of Contents

Chapter 1. Getting Started

Introduction

Thanks for choosing nForce 680i SLI/ nForce 680i LT SLI mainboards. They are based on nVIDIA® nForce 680i SLI/ 680i LT SLI Northbridge and Southbridge chipsets. The nForce 680i SLI/ nForce 680i LT SLI support Intel® Core™ 2 Extreme/ Core™ 2 Quad/ Core™ 2 Duo/ Pentium® Extreme Edition/ Pentium® Processors with FSB (Front Side Bus) frequencies up to 1333 MHz/ 1066 MHz/ 800 MHz.

The nForce 680i SLI/ nForce 680i LT SLI provide four DIMM (Dual In-Line Memory Modules) sockets allowing you to install 240-pin, unbuffered non-ECC, DDRII 800/ 667/ 533 SDRAMs. They also support Dual Channel Technology and allow you installing a total memory capacity of 8 GB.

These mainboards provide two PCI-E x16 slots which can be used with two identical SLI-ready PCI-Express graphics cards, enabling SLI Technology and significantly increasing graphics performance **<See Appendix III>**. Furthermore, the nForce 680i SLI also provides one PCI-E x8 slot for use with a graphics card. There are two PCI-E x1 slots provided for use with PCI-E x1 compatible expansion cards. Two standard PCI slots for use with standard PCI expansion cards are also allowed.

The nForce 680i SLI/ nForce 680i LT SLI provide one floppy disk drive connector that can be used with 360KB/720KB/ 1.2MB/1.44MB/2.88MB drives. There is also one IDE connector for connecting two IDE hard drives supporting Ultra ATA 33/66/100/133. Moreover, these mainboards come with Serial ATA II feature, six SATA II connectors which the interfaces can provide the transmit rate up to 3 Gbps and also support RAID 0/ 1/ 0+1/ 5 JBOD mode **<See Appendix II>**

The onboard High Definition Audio CODEC (ALC885) supports 8/6/4/2 channel audio play **<See Appendix I>**. These mainboards also support the Sony/Philips Digital Interfaces (SPDIF) output function.

The nForce 680i SLI also comes with two onboard 10/100/1000 Mbps Ethernet LAN chips. There are dual LAN ports on the back panel of your case that you can directly plug into an Internet cable. The nForce 680i LT SLI only provides one 10/100/1000 LAN port.

There are maximal ten USB2.0/ 1.1 ports which can be set up on the nForce 680i SLI mainboard. Eight USB2.0/ 1.1 ports are available on the nForce 680i LT SLI mainboard.

All the information (including hardware installation and software installation) in this manual are for reference only. The contents in this manual may be updated without notice. The company will not assume any responsibility for any errors or mistakes within.

Specification

CPU

- Support Socket 775
- Support Intel® Core™ 2 Extreme/ Core™ 2 Quad/ Core™ 2 Duo/ Pentium® Extreme Edition/ Pentium® Processors
- Support Hyper-Threading Technology
- Support 1333 MHz/ 1066 MHz/ 800 MHz/ 533 MHz FSB (Front Side Bus) Frequencies

Chipset

- Northbridge Chipset – nVIDIA® nForce 680i SLI SPP/ 680i LT SLI SPP
- Southbridge Chipset – nVIDIA® nForce 680i SLI MCP/ 680i LT SLI MCP
- I/O Controller – Winbond® W83627DHG
- High Definition Audio Codec – Realtek® ALC885
- LAN Controller – Marvell® 88E1116
- IEEE1394 Controller – TI® TSB43AB22A

Memory

- Four DIMM sockets
- Supports unbuffered & non-ECC DDRII 800/ 667/ 533 SDRAM
- Supports a total memory capacity of up to 8 GB
- Supports Dual Channel data bus

Onboard HD Audio CODEC (ALC885)

- High performance CODEC with high S/N ratio (>100 db)
- Compatible with Azalia 1.0 specification
- Supports 8/6/4/2 channel playback capability
- Supports jack sensing and re-tasking function
- Microphone AEC, NS, and BF technology for voice application
- Supports Sony/ Philips Digital Interfaces (S/PDIF) functionality

Slots

- Five PCI-Express interface slots for graphics cards and expansion cards
1. Two PCI-E x16 slots: supports x16 mode for true dual-graphics SLI configurations
2. One PCI-E x8 slot: supports x8 mode for future GPU physics applications 《the nForce 680i SLI only》
3. Two PCI-E x1 slots: supports up to x1 mode with 250 MB/s one-way bandwidth
- Two PCI interface slots for expansion cards

FDD Connector

- Supports one FDD connector to set up to two floppy disk drives
- Supports 360KB/ 720KB/ 1.2MB/ 1.44MB/ 2.88MB

IDE Connector

- One IDE connector
- Supports up to two IDE devices
- Supports Ultra ATA 33/66/100/133
- Supports high capacity hard disk drives

Serial ATA II Connectors

- Six SATA II connectors
- Supports SATA 2.0 specification with data transfer rate up to 3 Gbps
- One SATA II connector can only support one SATA II HDD

Onboard LAN Chip

- Supports Dual LAN 《the nForce 680i SLI only》
- Supports 10/100/1000 Mbps Ethernet LAN

I/O facility Connectors

- Supports one PS/2 mouse port and one PS/2 keyboard port
- Supports one IEEE1394 port on back panel
- Supports one SPDIF OUT port on back panel
- Supports one serial port (COM1) header and one IEEE1394 header with external device connected

Universal Serial Bus

- Six onboard USB 2.0/ 1.1 ports 《the nForce 680i SLI only》
- Two front USB headers come with this mainboard for additional four USB ports
- Support a maximum of ten USB ports to connect USB compatible devices 《the nForce 680i SLI only》

BIOS

- Phoenix-Award™ BIOS
- Support APM 1.2
- Support ACPI 2.0 power management

Green Function

- Supports ACPI (Advanced Configuration and Power Interface)
- Supports Phoenix-Award™ BIOS power management function
- Supports S0 (normal), S1 (power on suspend), S3 (suspend to RAM), S4 (suspend to disk – depends on OS), and S5 (soft – off).

Shadow RAM

- Integrated memory controller provides shadow RAM functionality and supports ROM BIOS

Flash Memory

- Supports flash memory functionality
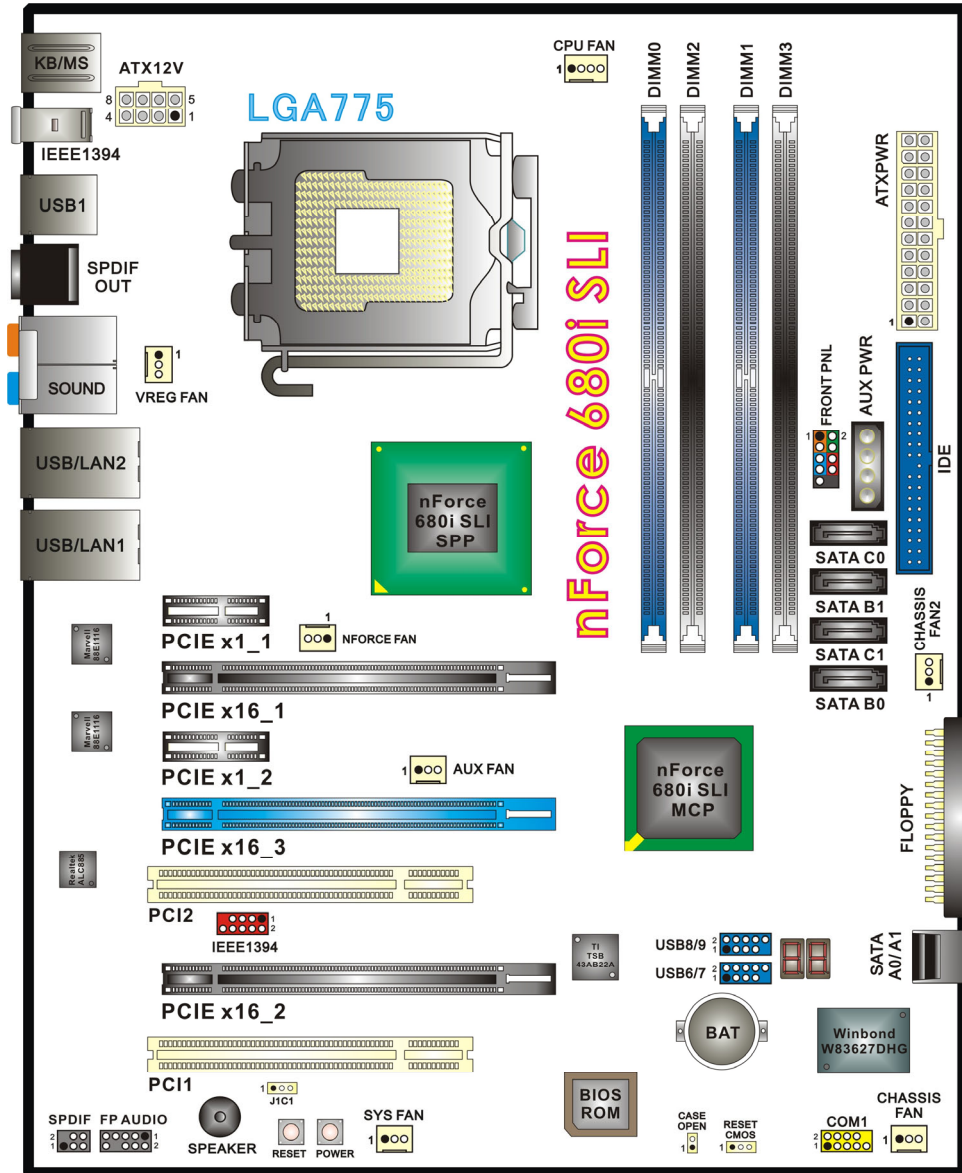- Supports ESCD functionality

Hardware Monitor Function

- Monitors CPU/ Northbridge/ Chassis Fan Speed
- Monitors CPU temperature
- Monitors CPU/ Memory/ System voltages

Configuration
Layout of nForce 680i SLI

Layout of nForce 680i LT SLI
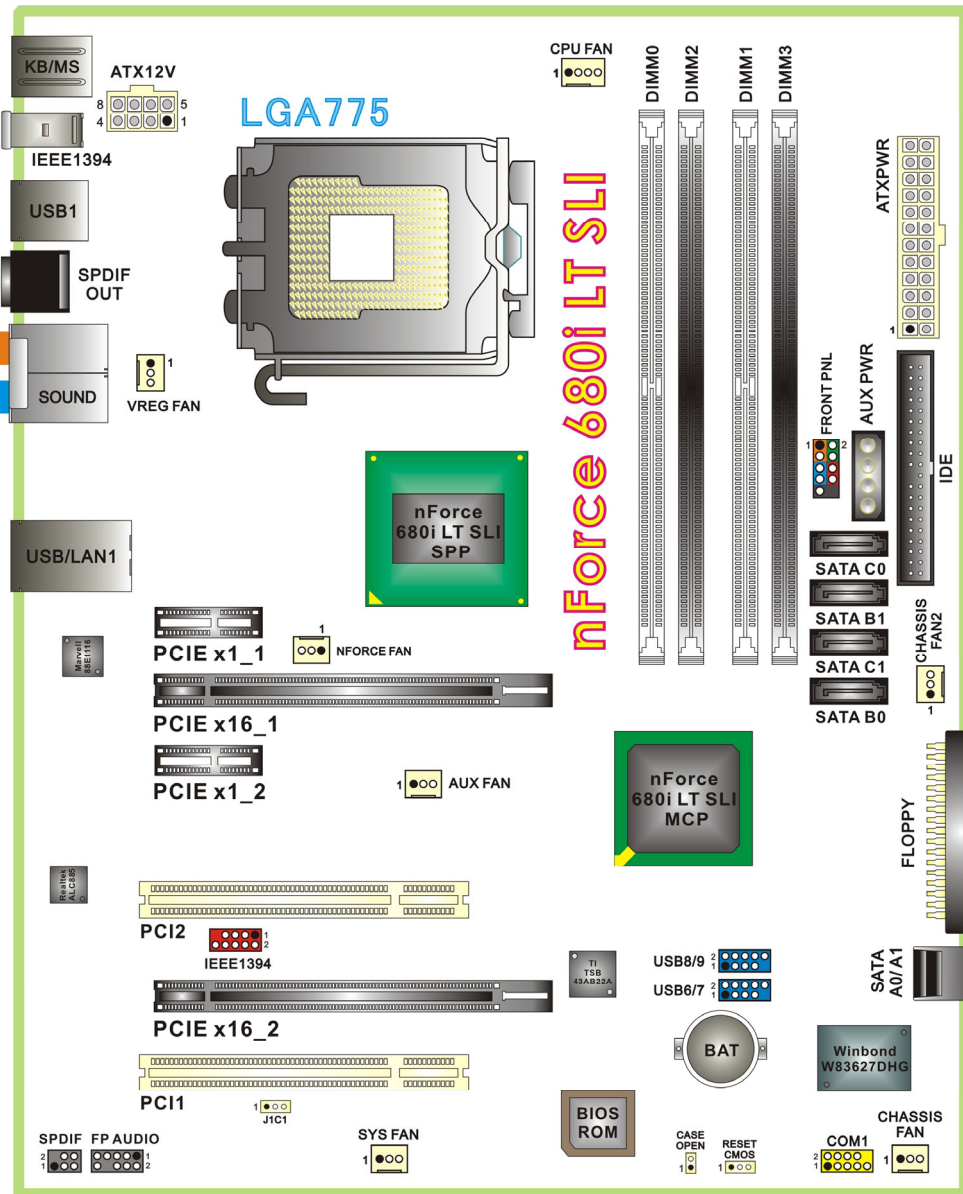
Hardware Installation

This section will assist you in quickly installing your system hardware. Wear a wrist ground strap before handling components. Electrostatic discharge may damage the system's components.

CPU Processor Installation

These mainboards support Intel® Core™ 2 Extreme/ Core™ 2 Quad/ Core™ 2 Duo/ Pentium® Extreme Edition/ Pentium® Processors using a Socket 775. Before building your system, we suggest you to visit the Intel website and review the processor installation procedures. http://www.intel.com

CPU Socket 775 Configuration Steps:

1. Locate the CPU socket 775 on your mainboard and nudge the lever away from the socket as shown. Then lift the lever to a 140-degree angle (A). Next, lift up the iron cover (B).
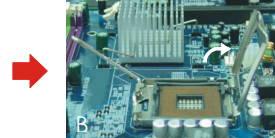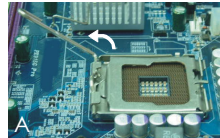
2. There are 2 distinctive marks located near the corners of the socket on the same side as the lever as shown (C). Match these marks with the marks on the CPU and carefully lower the CPU down onto the socket (D).
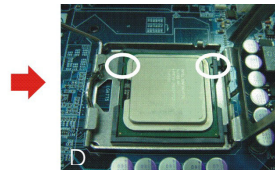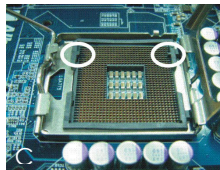
3. Replace the iron cover and then lower the lever until it snaps back into position (E). This will lock down the CPU (F).
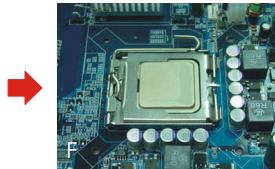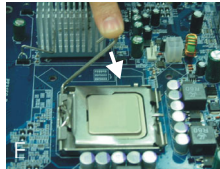
4. Smear thermal grease on the top of the CPU. Lower the CPU fan onto the CPU/CPU socket and secure it using the attachments or screws provided on the fan. Finally, attach the fan power cord to the **CPUFAN** header.
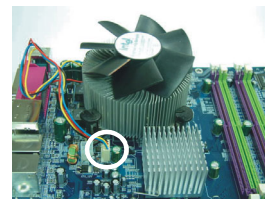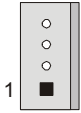
Attention

DO NOT touch the CPU pins in case they are damaged. Also, make sure that you have completed all installation steps before powered on the system. Finally, double-check that the cooling fan is properly installed and the CPU fan power cord is securely attached, in case your CPU and other sensitive components are damaged because of high temperatures.

FAN Headers: CPU FAN, NFORCE FAN

There are several fan headers available for cooling fans on the mainboard. Here describes the two important ones only. The cooling fans play an important role in maintaining ambient temperatures in your system. The CPUFAN header is attached with a CPU cooling fan. The NFORCE FAN header is attached with the nForce SPP fan.

	Pin	Assignment
	1	Control
	2	Sense
CPU FAN	3	PWR
	4	GND

	Pin	Assignment
	1	Sense
	2	+12V
NFORCE FAN	3	GND

Memory Installation: DIMM0/1/2/3

The nForce 680i SLI/ nForce 680i LT SLI mainboards provide four DIMM (Dual In-Line Memory Modules) sockets which allow you to install 240-pin, unbuffered non-ECC, DDRII 800/ 667/ 533 SDRAMs. They also support Dual Channel Technology and allow you to install a total memory capacity of 8 GB.

Attention

It is recommended that to install memories which are identical specifications (same timing specifications and same DDR II speed) to achieve the best effects. It may cause the failure of power-on or lower memory speed if installing different type, SPD (series presence detects) memories.

DIMM on the nForce 680i SLI

DIMM0

DIMM2

DIMM1

DIMM3
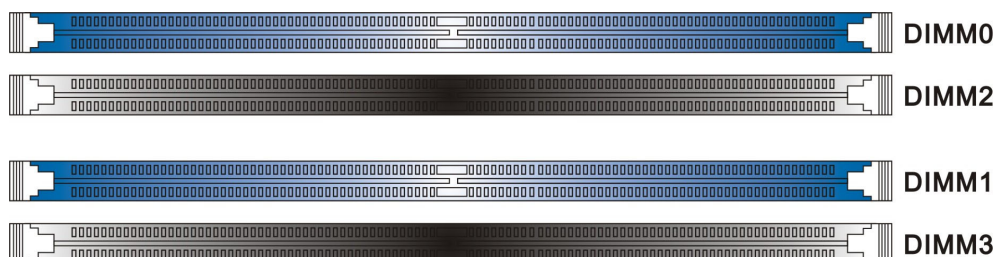
DIMM on the nForce 680i LT SLI

 DIMM0

 DIMM2

 DIMM1

 DIMM3
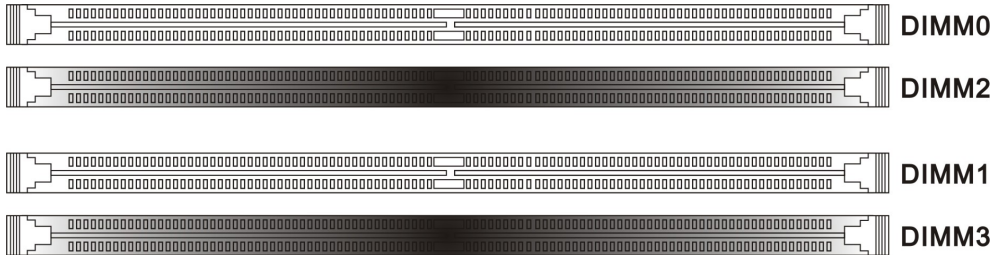
How to enable Dual-Channel DDRII:

1. These mainboards provide Dual-Channel functionality for the four DIMM sockets. Enabling Dual-Channel will significantly increase your data access rate than the before. DIMM0 and DIMM1 share one channel, and DIMM2 and DIMM3 share another channel.

2. To enable Dual-Channel, you need to install memories in different channels of DIMM sockets. According to the definition by Intel, once one channel of the memory capacity is the same with the other channel, the Dual-Channel will be enabled then.

For example, if you install one 256 MB memory in DIMM0 and another in DIMM1 (256MB x 2 = 512MB), you must install a total of 512 MB memory in DIMM2 or DIMM3, so that the Dual-Channel can be enabled.

3. If you only need to install one memory, it is recommended to install it in DIMM0 or DIMM1.

Memory Installation Steps:

1. Pull the white plastic tabs at both ends of the slot away from the slot.
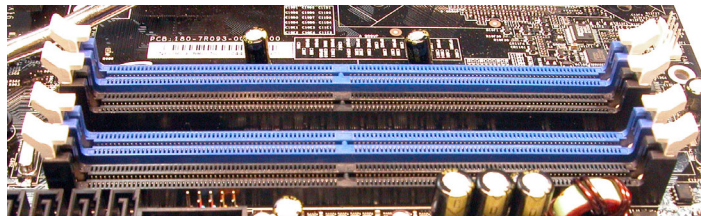
2. Match the notch on the RAM module with the corresponding pattern in the DIMM slot. This will ensure that the module will be inserted with the proper orientation.
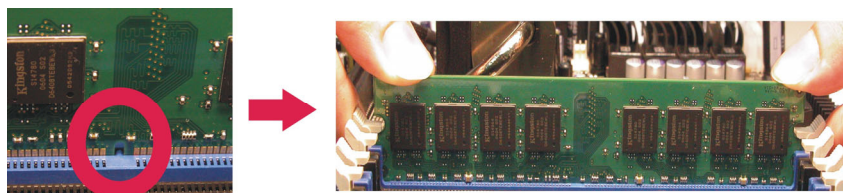
3. Lower the RAM module into the DIMM Slot and press firmly using both thumbs until the module snaps into place.
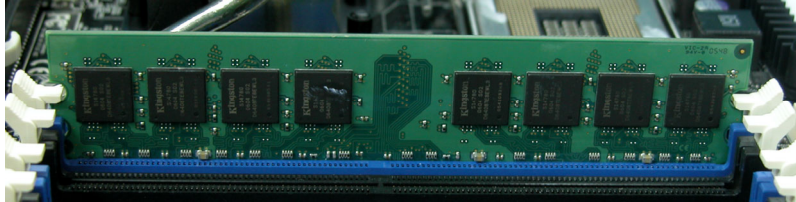
4. Repeat steps 1, 2 & 3 for the remaining RAM modules.

> ∗   The pictures above are for reference only. Your actual installation may vary slightly from the pictures.

Back Panel Configuration

Back Panel of the nForce 680i SLI
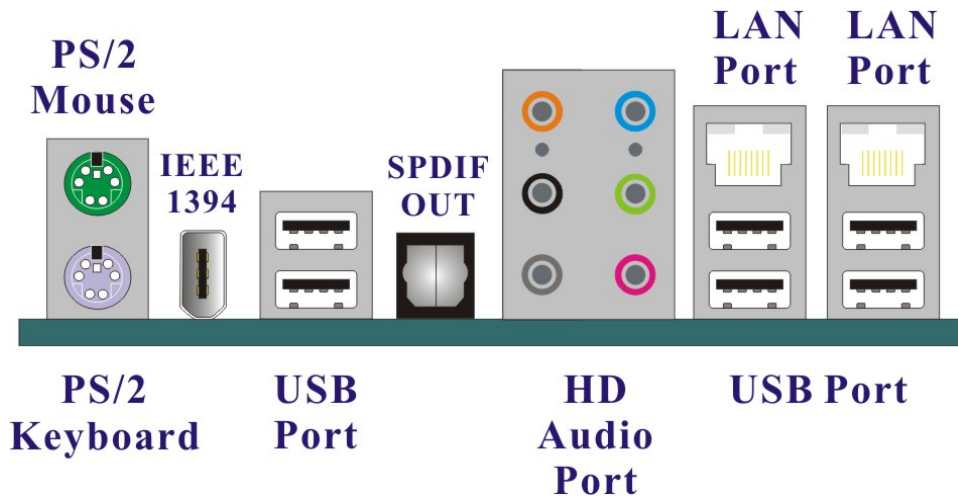
Back Panel of the nForce 680i LT SLI
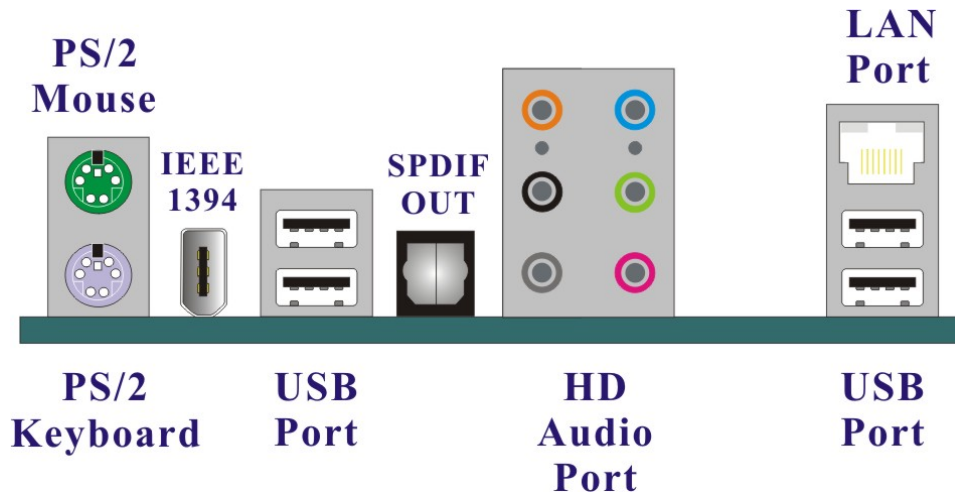
PS/2 Mouse & PS/2 Keyboard Ports: KB/MS

These mainboards provide a standard PS/2 mouse port and a PS/2 keyboard port.

S/PDIF OUT Port: SPDIF Out

The S/PDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder. Use this feature only when your stereo system has digital input function.

IEEE1394 Port: IEEE1394

There is one IEEE1394 port on the back panel of your case that allows you to attach compatible device is also available.

USB Ports/LAN Ports: USB1, USB/LAN1, USB/LAN2

There are six onboard USB 2.0/ 1.1 ports on the back panel. These USB ports are used to attach with USB devices, such as keyboard, mice and other USB supported devices. There are also dual 10/100/1000 Mbps Ethernet LAN ports available for you to attach an Internet cable. 《 NOTE: the nForce 680i LT SLI supports four onboard USB 2.0/1.1 ports and one LAN port.》

Audio Ports: SOUND

This mainboard provides six HD Audio ports for 8/6/4/2 channel playback capability. With jack sensing, auto detecting and adjusting, the device will make it easier to Plug and Play for you.

Center/Subwoofer			Line-In
Rear SPK Out			Line-Out
Side SPK Out			MIC IN
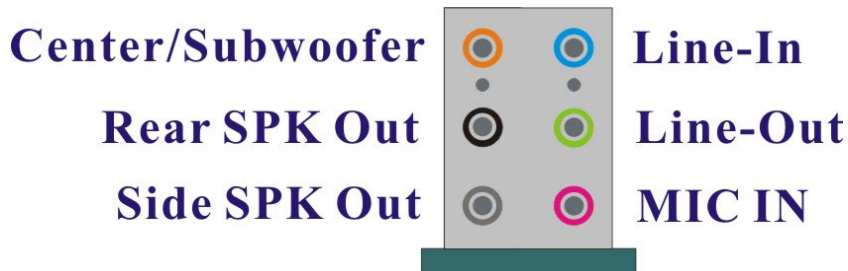
Line-In (blue)

This port is for audio input and connects to external audio devices such as CD player, tape player or other audio devices when the 8/6/4/2 channel audio effects driver is enabled.

Line-Out/Front Speaker-out (green)

This port is an output audio port used for connecting to speakers or a headset. A dual channel audio system is to provide basic audio functionality. When the 8/6/4/2 channel audio system is enabled, this port will output audio for the front speakers.

Mic-In (pink)

This port is for connecting to a microphone. When the 8/6/4/2 channel audio system is enabled, this port will be the input of your microphone.

Center/ Subwoofer （orange）

This port connects with the center/ subwoofer speakers. It will be functional when the 8/6 channel audio system is driven for center/ subwoofer output.

Rear Speaker Out （black）

This port is only functional for the output of the surround sound rear speakers when the 8/6/4/2 channel audio driver is installed and enabled.

Side Speaker Out （gray）

This port will be effective for the output of side surround speakers when the 8 channel audio system is set.

> This mainboard supports multi-channel audio system which allows you to transform your 2 speaker audio system into 8/ 6/ 4 speaker audio system. See **Appendix I** for more information.

Connectors

Floppy Disk Drive Connector: FLOPPY

These mainboards provide a standard floppy disk drive connector (FDD) that supports 360KB/ 720KB/ 1.2MB/ 1.44MB/ 2.88 MB floppy disk drives using a FDD ribbon cable.

Hard Disk Drive Connectors: IDE

These mainboards provide one IDE connector that supports Ultra ATA 33/66/100/133 IDE devices. You can attach a maximum of two IDE devices, such as hard disk drive (HDD), CD-ROM, DVD-ROM, etc. using an IDE ribbon cable.

In general, two IDE devices can be attached onto one IDE connector. If you attach two IDE HDDs, you must configure one drive as the master and the other one as the slave. In this case, one optical device i.e., CD-ROM, DVD-ROM…etc. should be attached to this connector as well.

SATA II Connector: SATA A0/A1/B0/B1/C0/C1

The six SATA II connectors support 3 Gbps transmit rate, and one SATA connector only can attach one SATA HDD of each time using SATA cables.

SATA A0/ A1/ B0/ B1/ C0/ C1	Pin	Assignment	Pin	Assignment
	1	GND	2	TX+
	3	TX-	4	GND
	5	RX+	6	RX-
	7	GND		

This mainboard supports RAID 0/ 1/ 0+1/ 5/ JBOD mode; refer **Appendix II** for more information.

Attention
The FDD/ IDE cable is designed and should be attached with a specific direction. One edge of the cable will usually in color such as red, to indicate that should line up with the header pin-1.

Front Panel Headers: FRONTPNL

PWRLED

PWRSW

2
1

+   –

HD_LED   RESET   **FRONTPNL**

NC

Pin	Assignment	Function	Pin	Assignment	Function
1	HD_PWR (+)	Hard Disk LED	2	HDR_BLNK_GRN	Front Panel Light
3	HAD#	(HD_LED)	4	HDR_BLNK_YEL	(PWRLED)
5	GND	Reset Switch	6	SWITCH_ON#	Power Switch
7	FP_RESET#	(RESET)	8	GND	(PWRSW)
9	N/C		10	Key	
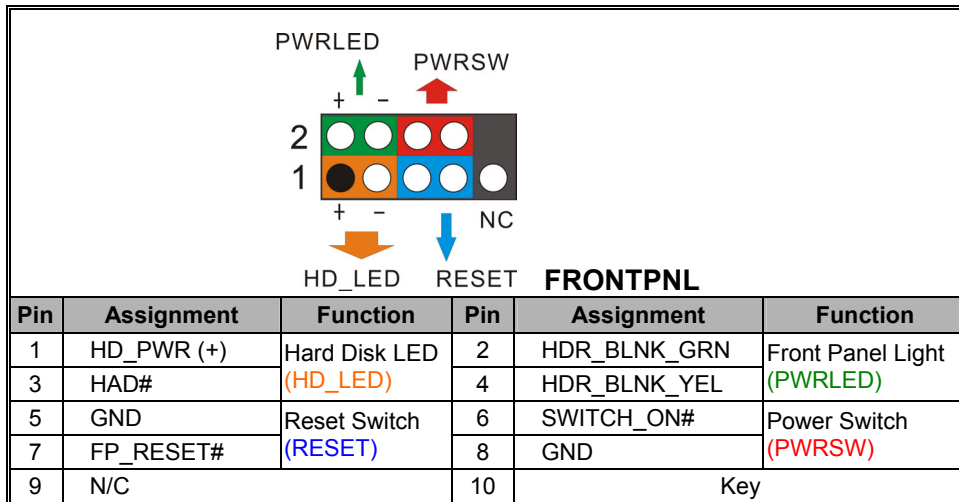
Hard Disk LED Header (Orange): HD_LED

If your case front panel has a hard drive LED cable, attach it to this header. The LED will flicker when there is hard disk drive activity.

Reset Switch Header (Blue): RESET

This header can be attached to a momentary SPST switch (reset button) cable on your case front panel. The switch is normally left open. When the switch closed, it will cause the mainboard to reset and run the POST (Power-On Self Test).

Power LED Header (Green): PWRLED

These mainboards provide a 2-pin power LED header. If there is a 2-pin power LED cord on your case front panel, you can attach it to the 2-pin power LED header. Then the power LED will illuminate while the system is powered on.

Power Switch Header (Red): PWRSW

This header can be attached to a power switch cable on your case front panel. You can turn your system on or off by pressing the button attached to this power switch cable.

EZ Control Button

Onboard Buttons: POWER, RESET

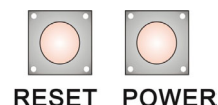These mainboard provide one Power Switch and one Reset Switch buttons for your convenience to turn on or restart your system. If pressing one of them, then you can start your computer easily before the mainboard is set into the case.

RESET   POWER

Headers & Jumpers

Case Open Warning Header: CASE OPEN

This header is used to warn the user when the computer case has been previously opened. Please connect the header with a cable to your case directly. (Make sure that your computer case provides this "case open" cable.)

CASE OPEN

Serial Interface Header: COM1

These mainboards provide one COM1 header for you to connect an external serial connector on the back panel of your case. Attaching the serial connector by a cable (Optional) onto this header, then you can use the serial connector to attach with a mic, modem or other peripheral device.

COM1
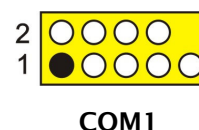
Front USB Headers: USB6/7, USB8/9

These mainboards provide six (or four) onboard USB 1.1/2.0 ports on the back panel that attach to USB devices. There are two additional USB headers that can be connected by cables to four more USB ports on the front panel of your case giving you a possible ten (or eight) USB ports. 《 NOTE: the nForce 680i LT SLI supports four onboard USB 2.0/1.1 ports on the back panel.》

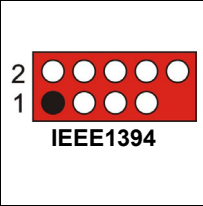|	Pin	Assignment	Pin	Assignment
USB6/7/8/9	1	5V_Dual	2	5V_Dual
	3	D-	4	D-
	5	D+	6	D+
	7	GND	8	GND
	9	Key	10	N/C

Attention

If you are using a USB 2.0 device with Windows® XP, you will need to install the USB 2.0 driver from the Microsoft® website. If you are using Service pack 1 (or higher) for Windows® XP, you will not have to install the driver.

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IEEE1394 Header: IEEE1394

These mainboards provide one onboard IEEE1394 port on the back panel of your case. One additional IEEE1394 header on the mainboard for one more port on the front panel is allowed. Please connect the header by a cable for use with compatible devices.

Pin	Assignment	Pin	Assignment
1	TPA+	2	TPA-
3	GND	4	GND
5	TPB+	6	TPB-
7	+12V	8	+12V
9	Key	10	GND

Clear CMOS Jumper: CLR_CMOS

The "Clear CMOS" function is used when you are unable boot your system and need to reset the BIOS settings (CMOS settings) back to the manufacturer's original settings. This is also a way to reset the system password if you have forgotten it.

CLR_CMOS	Assignment
Pin 1-2 Closed	Clear CMOS Data
Pin 2-3 Closed	Normal (Default)

Note: Close stands for putting a jumper cap onto two header pins.

The following steps explain how to reset your CMOS configurations when you forgot a system password.

1. Turn off your system and disconnect the AC power cable.
2. Set CLR_CMOS header to OFF (1-2 Closed).
3. Wait several seconds.
4. Set CLR_CMOS header to ON (2-3 closed).
5. Connect the AC power cable and turn on your system.
6. Reset your new password.

Audio Configuration

Front Audio Header: FP AUDIO

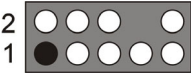The audio header supports High Definition Audio standard and provides two kinds of audio output choices, the Front Audio and the Rear Audio. The front audio supports re-tasking function.

FP AUDIO

Pin	Assignment	Pin	Assignment
1	PORT1_L	2	AUD_GND
3	PORT1_R	4	PRECENCE_J
5	PORT2_R	6	SENSE1_RETURN
7	SENSE_SEND	8	Key
9	PORT2_L	10	SENSE2_RETURN

Slots

PCI-Express x16 Interface slot: PCIE x16_1/ PCIE x16_2

These mainboards provide two PCI-Express x16 slots which support one-way bandwidth up to 4 GB/s. They are also allowed to install two identical SLI-ready PCI-Express graphics cards to enable SLI Technology for better graphics performance.
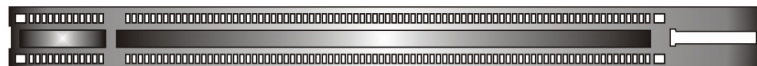
PCIE x16

PCI-Express x8 Interface slot: PCIE x16_3 （nForce 680i SLI only）

The nForce 680i SLI allows you to install an external graphics card, which the PCI-Express x8 interface, supporting one-way bandwidth up to 2 GB/s, is compatible to this PCIE x16_3 slot.

PCIE x16_3

PCI-Express x1 Interface slots: PCIE x1_1/ PCIE x1_2

The PCIE x1_1/ PCIE x1_2 slots are the PCI-Express x1 interface slots which can be supported up to x1 mode. You can insert expansion cards which are PCI-E x1 compatible onto these slots.
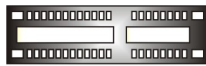
PCIE x1

PCI Interface Slots: PCI1/2

PCI stands for Peripheral Component Interconnect, which is a bus standard for installing expansion cards such as network card, SCSI card, etc. to these PCI slots.
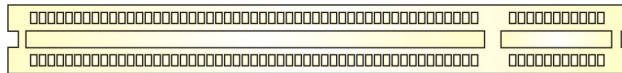
PCI

Power Supply Attachments

Auxiliary Power for Graphics: AUX PWR
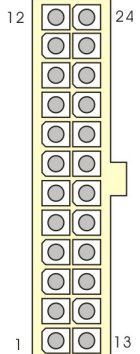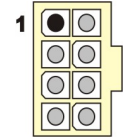
The 4-pin connector is an auxiliary power connection for graphics card. Exclusive power for the graphics card provides better graphics performance.

AUX PWR

Pin	Assignment	Pin	Assignment
1	+5V	2	GND
3	GND	4	+12V

ATX Power Connector: ATXPWR, ATX12V

This mainboard provides two ATX power connectors, a 24-pin ATXPWR connector and an 8-pin ATX12V connector. You must use a power supply that has both of these connectors and both connectors must be attached before the system is powered on. These power connectors support several power management functions such as the instant power-on function. The connector pins are described below.

Pin	Assignment	Pin	Assignment
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWROK	20	RSVD
9	+5V_AUX	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

ATXPWR

Pin	Assignment	Pin	Assignment
1	GND	5	+12V
2	GND	6	+12V
3	GND	7	+12V
4	GND	8	+12V

ATX12V

Attention

In general, power cords are designed and should be attached with a specific direction. The black wire of the power cord is Ground and should be attached onto the header location of Ground.

Chapter 2. BIOS Setup

Introduction

This section describes PHOENIX-AWARD™ BIOS Setup program which resides in the BIOS firmware. The Setup program allows users to modify the basic system configuration. The configuration information is then saved to CMOS RAM where the data is sustained by battery after power-down.

The BIOS provides critical low-level support for standard devices such as disk drives, serial ports and parallel ports. As well, the BIOS controls the first stage of the boot process, loading and executing the operating system.

The PHOENIX-AWARD™ BIOS installed in your computer system's ROM is a custom version of an industry standard BIOS. This means that it supports the BIOS of Intel® based processors.

This version of the PHOENIX-AWARD™ BIOS includes additional features such as virus and password protection as well as special configurations for fine-tuning the system chipset. The defaults for the BIOS values contained in this document may vary slightly with the version installed in your system.
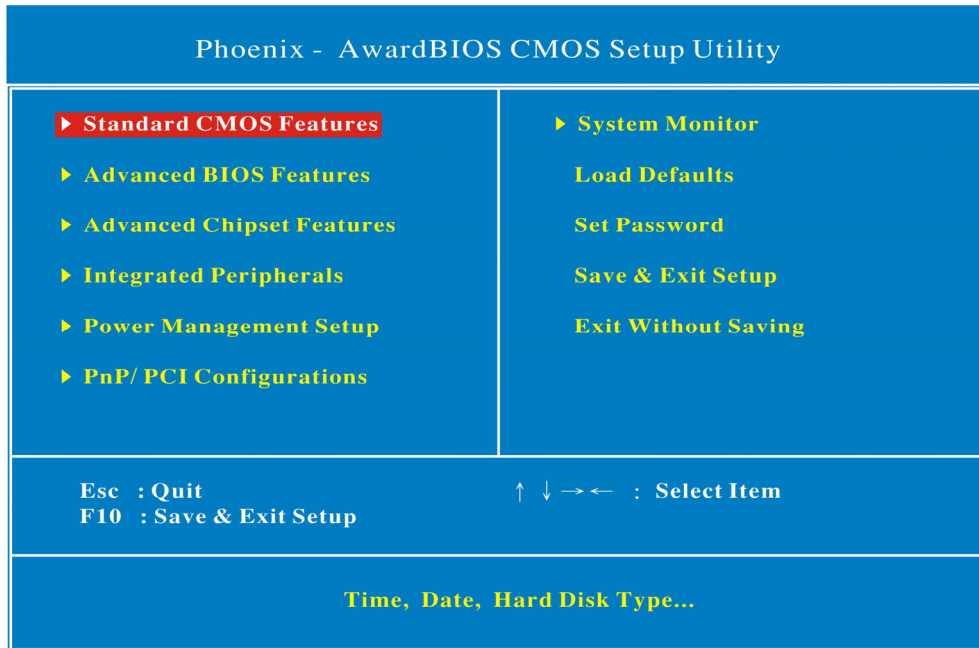
Key Function

In general, you can use the arrow keys to highlight options, press <Enter> to select, use the <PgUp> and <PgDn> keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate within the BIOS Setup program.

Keystroke	Function
Up arrow	Move to previous option
Down arrow	Move to next option
Left arrow	Move to the option on the left (menu bar)
Right arrow	Move to the option on the right (menu bar)
Esc	Main Menu: Quit without saving changes
	Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the option you desire
PgUp key	Increase the numeric value or enter changes
PgDn key	Decrease the numeric value or enter changes
+ Key	Increase the numeric value or enter changes
- Key	Decrease the numeric value or enter changes
Esc key	Main Menu – Quit and do not save changes into CMOS
	Status Page Setup Menu and Option Page Setup Menu – Exit
	Current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F7 key	Load the defaults from BIOS default table
F10 key	Save all the CMOS changes and exit

Main Menu

Phoenix - AwardBIOS CMOS Setup Utility

▶ **Standard CMOS Features**	▶ System Monitor
▶ Advanced BIOS Features	Load Defaults
▶ Advanced Chipset Features	Set Password
▶ Integrated Peripherals	Save & Exit Setup
▶ Power Management Setup	Exit Without Saving
▶ PnP/ PCI Configurations	

Esc : Quit   ↑ ↓ → ← : Select Item
F10 : Save & Exit Setup

Time, Date, Hard Disk Type...

Standard CMOS Features

Include all the adjustable items in standard compatible BIOS.

Advanced BIOS Features

Include all the adjustable items of Award special enhanced features.

Advanced Chipset Features

Include all the adjustable items of chipset special features.

Integrated Peripherals

Include all onboard peripherals.

Power Management Setup

Include all the adjustable items of Green function features.

PnP/PCI Configurations

Include all configurations of PCI and PnP ISA resources.

System Monitor

It is for monitoring the system status such as temperature, voltage, and fan speeds.

Load Defaults

It can load the preset system parameter values to set the system in its stable performance configurations.

Set Password

Set change or disable password. It allows you to limit access to the system and/or BIOS setup.

Save & Exit Setup

Save CMOS value settings to CMOS and exit setup.

Exit Without Saving

All CMOS value changes and exit setup.

Chapter 3: Software Setup

Software List

Category	Platform
NVIDIA® Chipset Driver	Windows Vista/ XP
Realtek® Audio Driver	Windows Vista/ XP

Attention

You don't need to install the driver for USB 2.0 version if you are using Windows® XP with Service Pack 2 (or higher).

Software Installation

Place the Driver CD into the CD-ROM drive and the Installation Utility will auto-run. You can also launch the Driver CD Installation Utility manually by executing the Intel.exe program located on the Driver CD. (For more details, please refer to the Readme.txt files that in each folder of the Driver.)

◎   The screen and images are only for general reference. The version of the screens you received with your software may vary slightly.
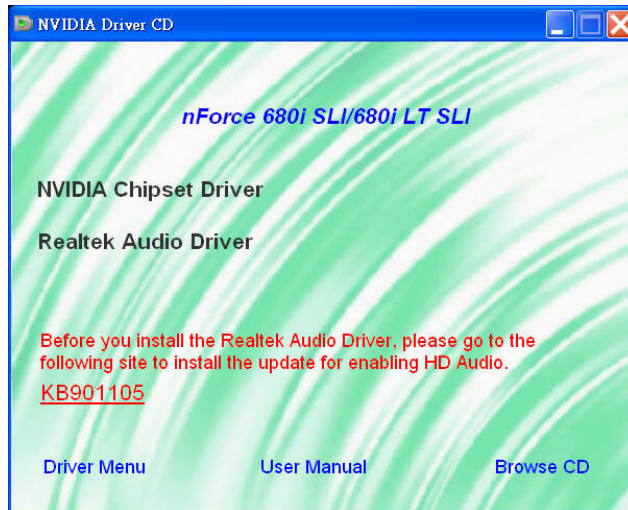
1.   When you insert the driver CD into the CD-ROM, you'll see the screen as the picture below. There are several driver buttons displayed in the "Driver Menu" screen, and you can click on the drivers to install.

Windows® Vista Driver
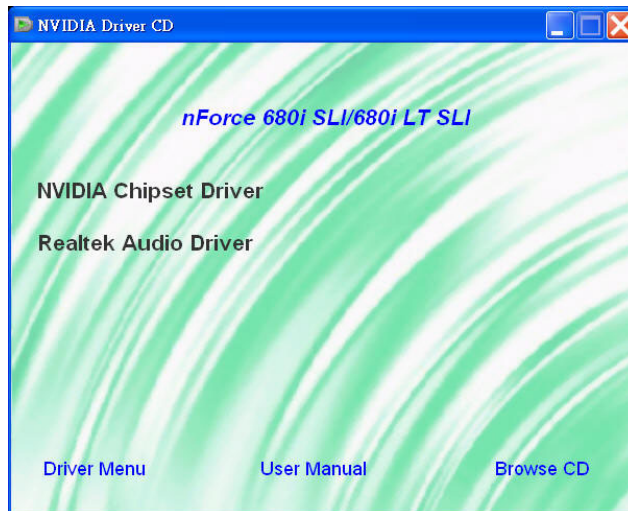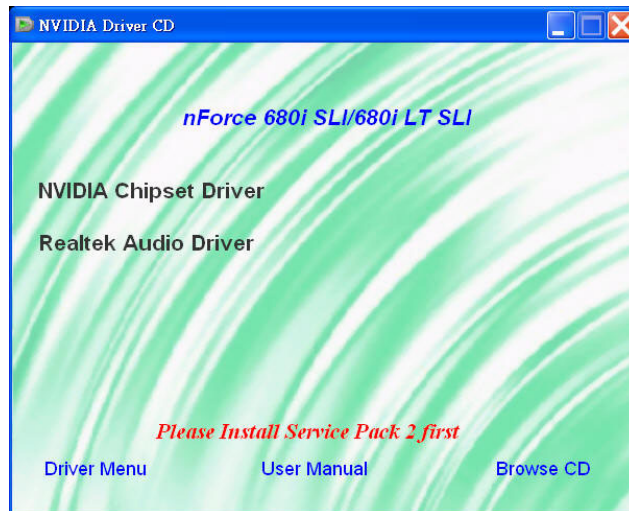

Windows® XP (64bit) Driver

Attention
Before you install the Realtek Audio Driver on Windows® XP (64bit) operating system, please go to the Microsoft® website to install the update for enabling HD Audio.

Windows® XP (32bit) Driver

- **NVIDIA Chipset INF** – It provides all drivers for the functions which built in both the Northbridge/ Southbridge.
- **Realtek Audio Driver** – It provides the driver of Realtek HD Audio CODEC.

2. Click on the "User Manual" button, you can choose the manual to read.

Attention: Before you read manuals, you must install the driver of Adobe Acrobat Reader 6 to browse PDF files.

3. If you click the "Browse CD" button, you can browse all the files in the Driver CD.

Chapter 4: Troubleshooting

Problem 1:

No power to the system. Power light does not illuminate. Fan inside power supply does not turn on. Indicator lights on keyboard are not lit.

Causes:

1. Power cable is unplugged.

2. Defective power cable.

3. Power supply failure.

4. Faulty wall outlet; circuit breaker or fuse blown.

Solutions:

1. Make sure power cable is securely plugged in.

2. Replace cable.

3. Contact technical support.

4. Use different socket, repair outlet, reset circuit breaker or replace fuse.

Problem 2:

System inoperative. Keyboard lights are on, power indicator lights are lit, hard drive is active but system seems "hung"

Causes: Memory DIMM is partially dislodged from the slot on the mainboard.

Solutions:

1. Power Down

2. Using even pressure on both ends of the DIMM, press down firmly until the module snaps into place.

Problem 3:

System does not boot from the hard disk drive but can be booted from the CD-ROM drive.

Causes:

1. Connector between hard drive and system board unplugged.

2. Damaged hard disk or disk controller.

3. Hard disk directory or FAT is corrupted.

Solutions:

1. Check the cable running from the disk to the disk controller board. Make sure both ends are securely attached. Check the drive type in the standard CMOS setup.

2. Contact technical support.

3. Backing up the hard drive is extremely important. Make sure your periodically perform backups to avoid untimely disk crashes.

Problem 4:

System only boots from the CD-ROM. The hard disk can be read and applications can be used but booting from the hard disk is impossible.

Causes: Hard Disk boot sector has been corrupted.

Solutions: Back up data and applications files. Reformat the hard drive. Re-install applications and data using backup disks.

Problem 5:

Error message reading "SECTOR NOT FOUND" displays and the system does not allow certain data to be accessed.

Causes: There are many reasons for this such as virus intrusion or disk failure.

Solutions: Back up any salvageable data. Then performs low level format, partition, and then a high level format the hard drive. Re-install all saved data when completed.

Problem 6:

Screen message says "Invalid Configuration" or "CMOS Failure."

Causes: Incorrect information entered into the BIOS setup program.

Solutions: Review system's equipment. Reconfigure the system.

Problem 7:

The Screen is blank.

Causes: No power to monitor.

Solutions: Check the power connectors to the monitor and to the system.

Problem 8:

Blank screen.

Causes:

1. Memory problem.
2. Computer virus.

Solutions:

1. Reboot computer. Reinstall memory. Make sure that all memory modules are securely installed.
2. Use anti-virus programs to detect and clean viruses.

Problem 9:

Screen goes blank periodically.

Causes: Screen saver is enabled.

Solutions: Disable screen saver.

Problem 10:

Keyboard failure.
Causes: Keyboard is disconnected.
Solutions: Reconnect keyboard. Replace keyboard if you continue to experience problems.

Problem 11:

No color on screen.
Causes:
1. Faulty Monitor.
2. CMOS incorrectly set up.
Solutions:
1. If possible, connect monitor to another system. If no color appears, replace monitor.
2. Call technical support.

Problem 12:

The screen displays "C: drive failure."
Causes: Hard drive cable not connected properly.
Solutions: Check hard drive cable.

Problem 13:

Cannot boot the system after installing a second hard drive.
Causes:
1. Master/slave jumpers not set correctly.
2. Hard drives are not compatible / different manufacturers.
Solutions:
1. Set master/slave jumpers correctly.
2.Run SETUP program and select the correct drive types. Call drive manufacturers for possible compatibility problems with other drives.

Problem 14:

Missing operating system on hard drive.
Causes: CMOS setup has been changed.
Solutions: Run setup and select the correct drive type.

Problem 15:

Certain keys do not function.
Causes: Keys jammed or defective.
Solutions: Replace keyboard.

Appendix I: 8/6/4/2 Channel Audio Effect Setup
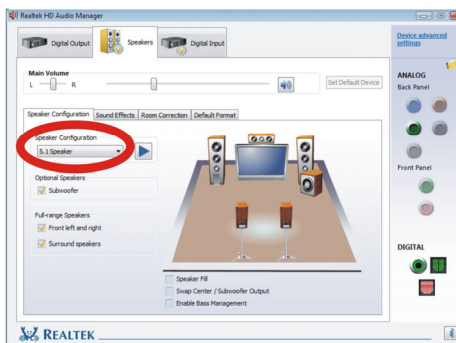
Channels Setup for Windows Vista

1. After entering the system, click the audio icon 🔊 from the Windows Vista screen.

2. When your audio device is plugged, the system will detect it and show the "Speakers" tab automatically. You can see the screen like the picture below.

3. You can choose "Stereo", "Quadraphonic", "5.1 Speaker" or "7.1 Speaker" by your speakers in the "Speaker Configuration" item.

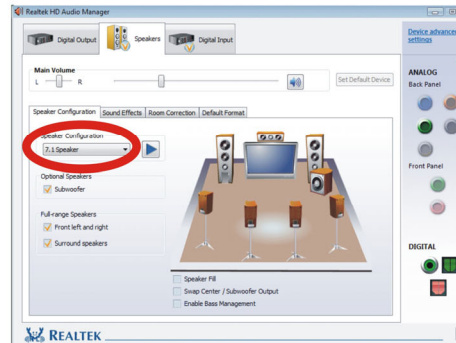4. You can click the "Auto test" button ▶ to test your audio devices.
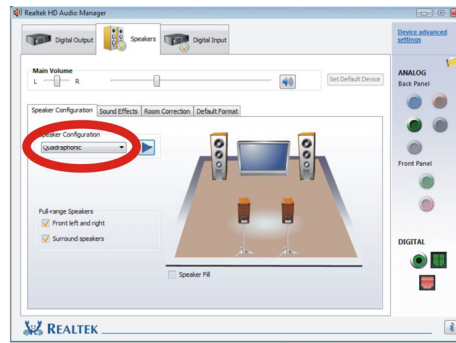
2 Channel

4 Channel

6 Channel

8 Channel

Channels Setup for Windows XP

1. After into the system, click the audio icon from the Windows XP screen.

2. Click "Audio I/O" button, you can see the screen like the picture below.

3. You can choose 2, 4, 6 or 8 channels by your speakers.

4. You can click the "Auto test" button to test your audio devices.

2 Channel

4 Channel

6 Channel

8 Channel

To take advantage of 7.1 Channel Audio Effects, you must use audio software that supports this functionality. You must also make sure your software is specifically configured for 7.1 Channel Audio Effect supoort.

Appendix II: RAID Setup

Introduction to RAID

RAID (Redundant Array of Independent Disks) technology is a sophisticated disk management system that manages multiple disk drives. It enhances I/O performance and provides redundancy in order to prevent the loss of data in case of individual disk failure. The RAID facility on this board provides RAID 0, RAID 1, RAID 0+1, RAID JBOD, and RAID 5.

Disk Striping (RAID 0)

Striping is a performance-oriented, non-redundant disk storage technology. With RAID striping, multiple disks are used to form a larger virtual disk. Data is then striped or mapped across all the physical disks. In this way, multiple I/O operations can be executed in parallel, enhancing performance. Striping does not provide fault tolerance. The minimum number of hard drives for RAID 0 is 2.

Disk Mirroring (RAID 1)

With Disk Mirroring there are redundant disks that mirror the primary disks. Data that is written to the primary disks are also written to the redundant disks. This redundancy provides fault tolerant protection from a single disk failure. If a read/write failure occurs on one drive, the system can still read and write data using the other drive. The minimum number of drives for a RAID 1 configuration is 2. You are required to use an even number of drives.

Disk Striped Mirroring (RAID 0+1)

This mode combines both the performance benefits of RAID 0 with the fault tolerance of RAID 1. The minimum number of drives for RAID 0+1 configuration is 4 drives. This configuration also requires an even number of drives.

Note: All mirrored configurations or striped/mirrored configurations should use drives of the same size.

RAID SPAN (RAID JBOD)

RAID SPAN allows JBOD (Just a Bunch Of Disks) configurations which simply uses multiple disks to form a larger virtual disk without any other specialized disk management functionality. RAID SPAN is not considered a standard RAID implementation.

Disk Rotating Parity Array (RAID 5)

RAID 5 is one of the most popular implementations of RAID. It utilizes the configurations of Byte Stripping and Block Stripping, and writes the data to multiple disks. The minimum number of drives for a RAID 5 configuration is 3. It possesses the stripe error correction information; therefore, once a read/write failure occurs on one drive, the system can still read and write data using the other drive. As result, the performance of RAID 5 can substantially decrease in a write-heavy environment.
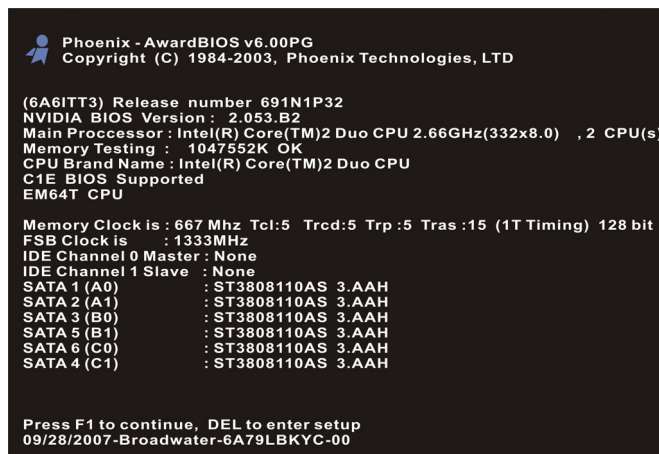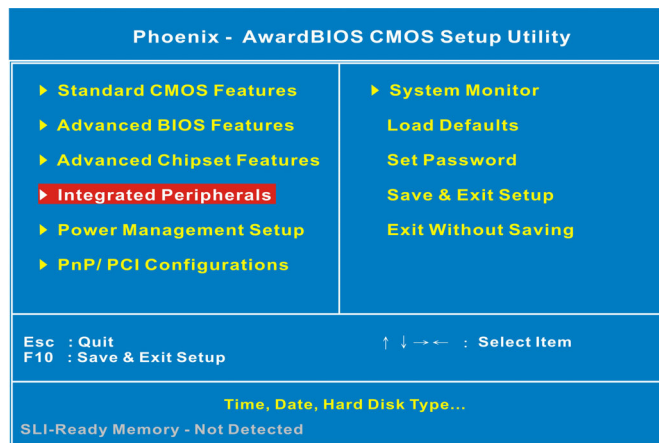
Before you create a RAID Array

Before you configure your RAID Array, you have to enable the "RAID" option in the BIOS Setup Utility.

Integrated Peripherals >> RAID Config >> RAID Enable >> Save & Exit Setup

1. When the screen below displays, press **<Delete>** to enter the BIOS setup screen.
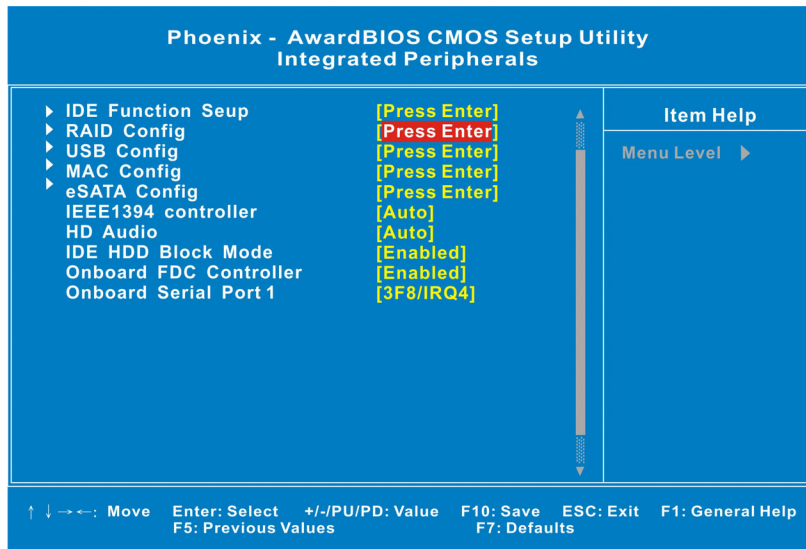
```
  Phoenix - AwardBIOS v6.00PG
  Copyright (C) 1984-2003, Phoenix Technologies, LTD

  (6A6ITT3) Release number 691N1P32
  NVIDIA BIOS Version :  2.053.B2
  Main Proccessor : Intel(R) Core(TM)2 Duo CPU 2.66GHz(332x8.0)  , 2 CPU(s)
  Memory Testing :   1047552K OK
  CPU Brand Name : Intel(R) Core(TM)2 Duo CPU
  C1E BIOS Supported
  EM64T CPU

  Memory Clock is : 667 Mhz  Tcl:5   Trcd:5  Trp :5  Tras :15  (1T Timing)  128 bit
  FSB Clock is      : 1333MHz
  IDE Channel 0 Master : None
  IDE Channel 1 Slave  : None
  SATA 1 (A0)           : ST3808110AS  3.AAH
  SATA 2 (A1)           : ST3808110AS  3.AAH
  SATA 3 (B0)           : ST3808110AS  3.AAH
  SATA 5 (B1)           : ST3808110AS  3.AAH
  SATA 6 (C0)           : ST3808110AS  3.AAH
  SATA 4 (C1)           : ST3808110AS  3.AAH


  Press F1 to continue,  DEL to enter setup
  09/28/2007-Broadwater-6A79LBKYC-00
```

2. Move the arrow keys to the **"Integrated Peripherals"** item and press **<Enter>** .

```
            Phoenix -  AwardBIOS CMOS Setup Utility

    ▶ Standard CMOS Features      ▶ System Monitor

    ▶ Advanced BIOS Features        Load Defaults

    ▶ Advanced Chipset Features     Set Password

    ▶ Integrated Peripherals        Save & Exit Setup

    ▶ Power Management Setup        Exit Without Saving

    ▶ PnP/ PCI Configurations



   Esc  : Quit                  ↑ ↓ → ←  :  Select Item
   F10  : Save & Exit Setup

              Time, Date, Hard Disk Type...
   SLI-Ready Memory - Not Detected
```

3. After entering the sub-menu, arrow down to the **"RAID Config"**item. Press **<Enter>**.

```
         Phoenix - AwardBIOS CMOS Setup Utility
                 Integrated Peripherals

 ▶ IDE Function Seup           [Press Enter]        ▲        Item Help
 ▶ RAID Config                 [Press Enter]
 ▶ USB Config                  [Press Enter]            Menu Level   ▶
 ▶ MAC Config                  [Press Enter]
 ▶ eSATA Config                [Press Enter]
   IEEE1394 controller         [Auto]
   HD Audio                    [Auto]
   IDE HDD Block Mode          [Enabled]
   Onboard FDC Controller      [Enabled]
   Onboard Serial Port 1       [3F8/IRQ4]



                                                   ▼

 ↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
               F5: Previous Values                F7: Defaults
```

4. Enable the **"RAID Enable"** item and then select the SATA ports with disks that you want to use for RAID. Press **<Esc>** to exit this screen.

```
         Phoenix - AwardBIOS CMOS Setup Utility
                       RAID  Config

   RAID Enable                [Enabled]                     Item Help
   SATA 1 (A0) RAID           [Enabled]
   SATA 2 (A1) RAID           [Enabled]            Menu Level   ▶▶
   SATA 3 (B0) RAID           [Enabled]
   SATA 4 (C1) RAID           [Enabled]
   SATA 5 (B1) RAID           [Enabled]
   SATA 6 (C0) RAID           [Enabled]






 ↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
               F5: Previous Values                F7: Defaults
```

34
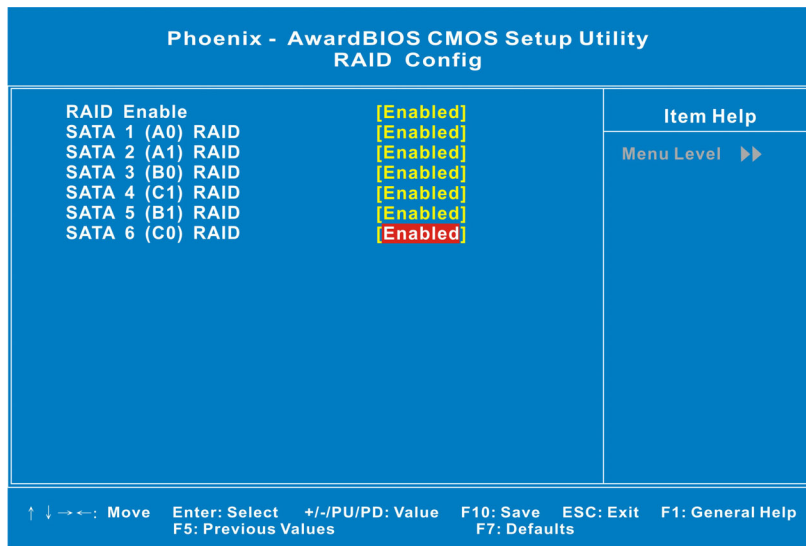
5. At the main screen arrow over to the **"Save & Exit Setup"** item. Press **<Enter>**.

```
          Phoenix - AwardBIOS CMOS Setup Utility

      ▶ Standard CMOS Features      ▶ System Monitor

      ▶ Advanced BIOS Features         Load Defaults

      ▶ Advanced Chipset Features      Set Password

      ▶ Integrated Peripherals         Save & Exit Setup

      ▶ Power Management Setup          Exit Without Saving

      ▶ PnP/ PCI Configurations


      Esc  : Quit                   ↑ ↓ → ←  : Select Item
      F10  : Save & Exit Setup

                      Save Data to CMOS
      SLI-Ready Memory - Not Detected
```
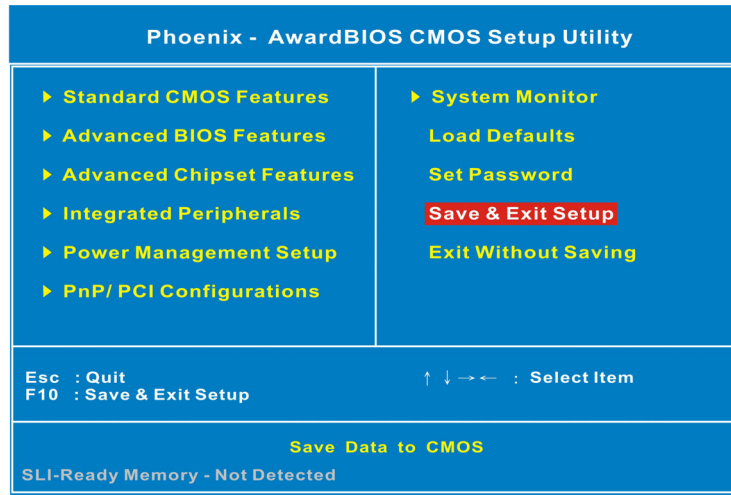
6. Press **<Y>**, and then press **<Enter>** to finish the setup.

```
          Phoenix - AwardBIOS CMOS Setup Utility

      ▶ Standard CMOS Features      ▶ System Monitor

      ▶ Advanced BIOS Features         Load Defaults

      ▶ Advanced Chipset Features      Set Password

      ▶ Integrated Peripherals         Save & Exit Setup

      ▶ Power Managei              out Saving

      ▶ PnP/ PCI Confi   SAVE to CMOS and EXIT (Y/N)?  Y


      Esc  : Quit                   ↑ ↓ → ←  : Select Item
      F10  : Save & Exit Setup

                      Save Data to CMOS
      SLI-Ready Memory - Not Detected
```
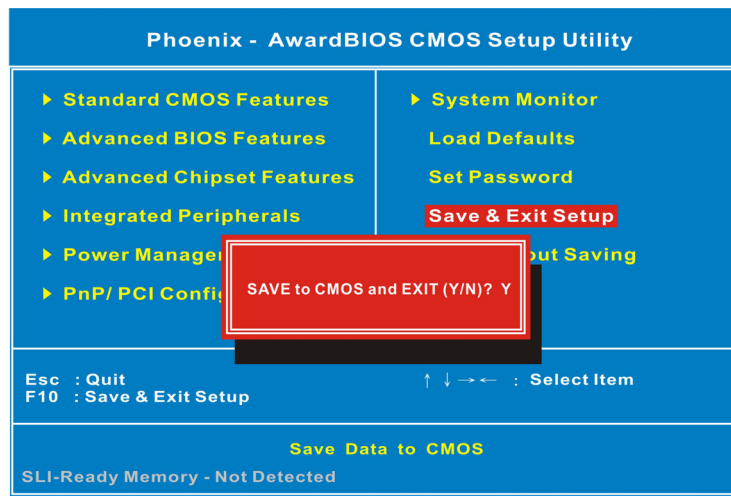
NVIDIA RAID Setup Utility Configuration

The **NVIDIA RAID Setup Utility** is used to configure RAID disk management into your hard disks. This section will explain how to setup and maintain your RAID disk drives.

1. When the system boots up during the POST (Power-On Self Test), you will be given an opportunity to enter the NVIDIA RAID Setup Utility when the screen prompts you with the following message.

"Press ＜F10＞ to enter RAID setup utility…"

```
MediaShield ROM BIOS 9.85
Copyright (C) 2007 NVIDIA Corp.


Detecting arrays ...


Press F10 to enter RAID setup utility ...
```
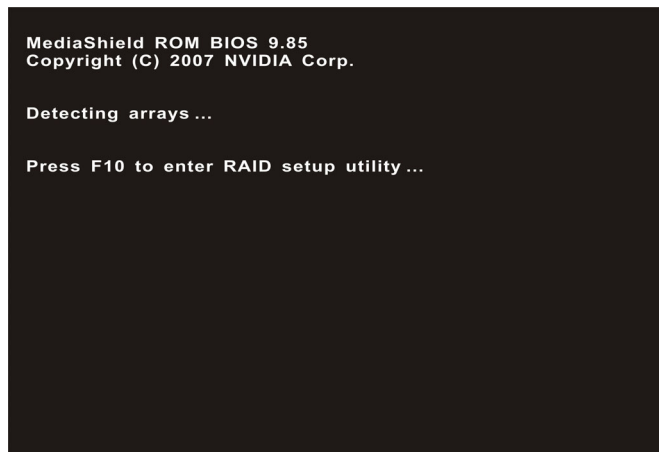
2. Press the **<F10>** key to enter the NVIDIA RAID Setup Utility (note that you will only have a short window of time to press **<F10>** before the system continues the next step of the boot process). The NVIDIA RAID Setup Utility main screen will display as shown below. In addition, you will see all the SATA HDDs connected to your computer.

```
              MediaShield BIOS Apr 20 2007
                 – Define a New Array –

  RAID Mode: Mirrored          Stripe Block: Optimal

  Free Disks                   Array Disks
  Port   Disk Model  Capacity  Port   Disk Model  Capacity

  1.0  ST3808110AS  74.53GB
  1.1  ST3808110AS  74.53GB [→] Add
  2.0  ST3808110AS  74.53GB
  2.1  ST3808110AS  74.53GB



                              [←] Del


  [ESC] Quit [F6] Back [F7] Finish [TAB] Navigate [↑ ↓] Select [ENTER] Popup
```
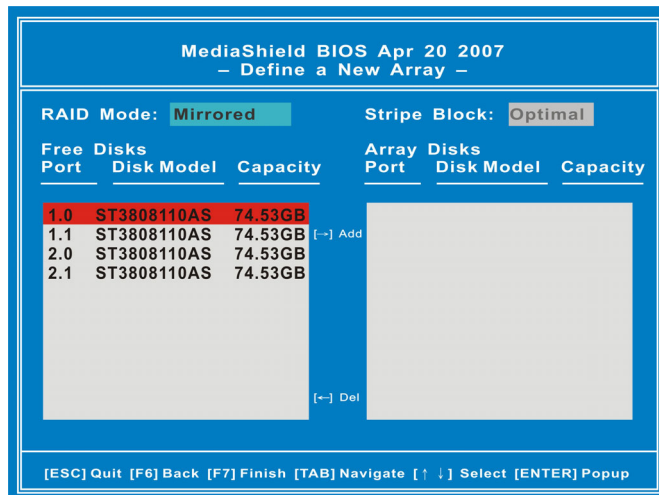
Attention

The "Port" and "Disk Model", shown on these screens represent the disk drives installed on the PATA or SATA connectors and are sample data only. The actual data that displays on your screen will likely vary.

Item Description

     RAID Mode   Choose the RAID Mode you wish to configure.

- *RAID 0 (Striped)*
- *RAID 1 (Mirrored)*
- *RAID 0+1 (Striped Mirror)*
- *JBOD (Spanned)*
- *RAID 5*

∗   Your choice will depend on the RAID Mode that best fits your needs for either performance, redundancy or both.
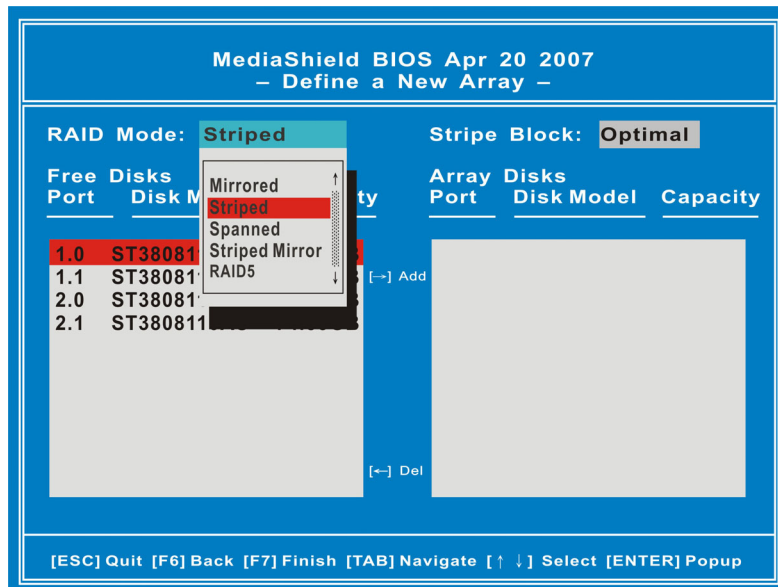
▦ **Stripe Block**

Stripe block size will directly affect performance when data is written to or read by your system.

- *4K*
- *8K*
- *16K*
- *32K*
- *64K*
- *128K*
- *Optimal*

∗ This item is not available for *RAID 1* and *JBOD* arrays.

```
MediaShield BIOS Apr 20 2007
─ Define a New Array ─

RAID Mode: Striped          Stripe Block: Optimal

Free Disks                  Array Disks
Port    Disk Model  Capacity  Port    Disk Mo        acity

                                              4K
1.0  ST3808110AS  74.53GB                      8K
1.1  ST3808110AS  74.53GB  [→] Add             16K
2.0  ST3808110AS  74.53GB                      32K
2.1  ST3808110AS  74.53GB                      64K
                                              128K
                                              Optim



                            [←] Del


[ESC] Quit [F6] Back [F7] Finish [TAB] Navigate [↑ ↓] Select [ENTER] Popup
```
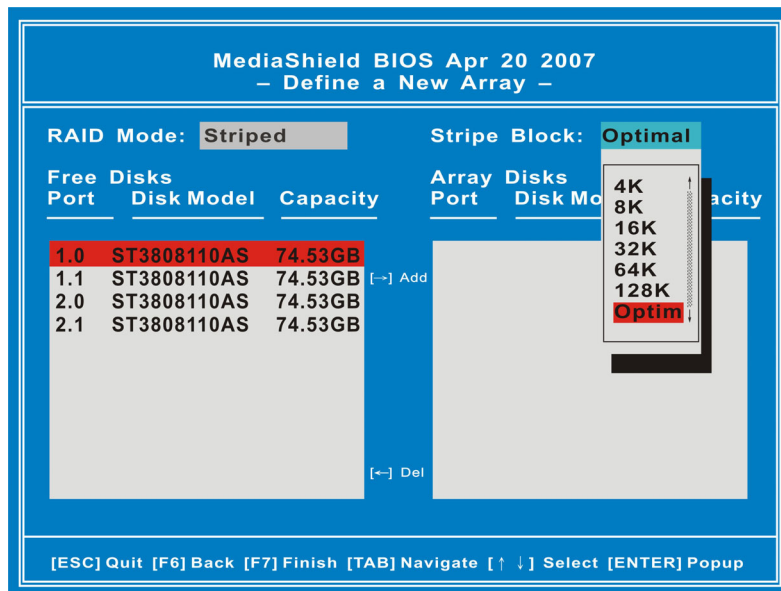
Creating a New Array

1. The screen you will see upon initial configuration is the **"Define a New Array"** screen. **<Tab>** over to the "RAID Mode" item and press <Enter>. According to your configuration requirements, select "Mirrored" (RAID 1), "Striped" (RAID 0), "Striped Mirror" (RAID 0+1), "Spanned" (JBOD), or "RAID 5" in the drop-down menu. Then hit **<Enter>**. The example here is "RAID 0 (Striped)".
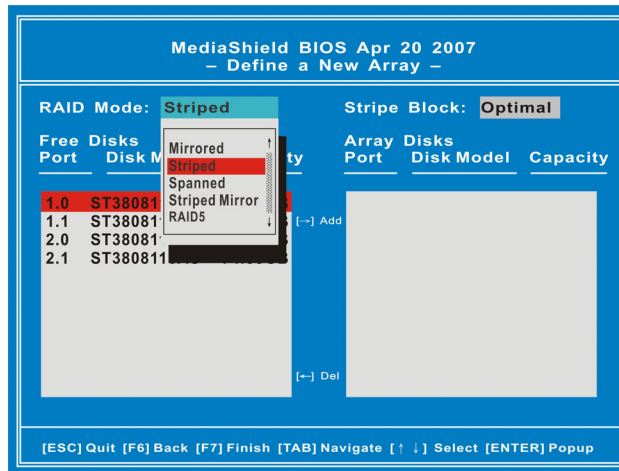
2. Next, **<Tab>** over to the "Stripe Block" item and press **<Enter>**. You can select the stripe block size for your array which will affect performance. It's recommended that you select "Optimal". Press **<Enter>**.
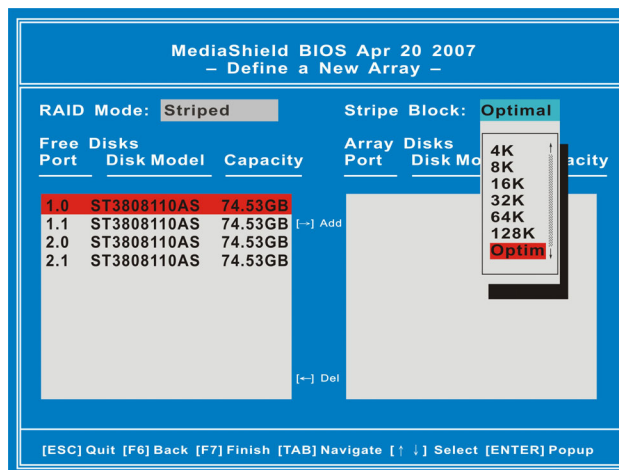
3. **<Tab>** over to the "Free Disks" selection box, and use the up/down arrow keys to select disks for your RAID array. Use the right-arrow key to move selected disks to the "Array Disks" section (the selected drive will be highlighted). You can use the left-arrow key to reverse your selection.
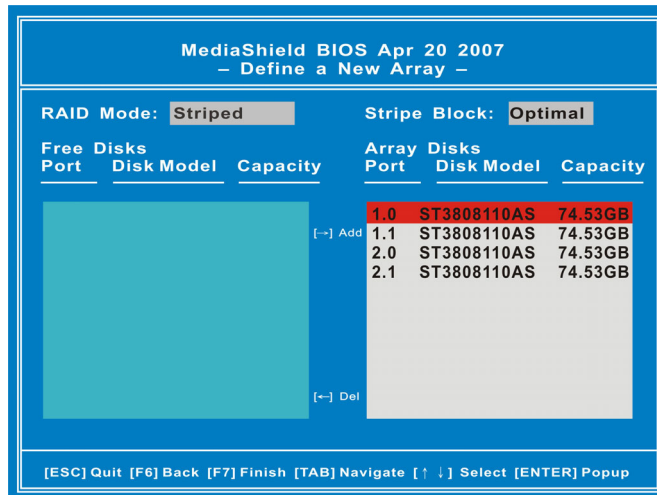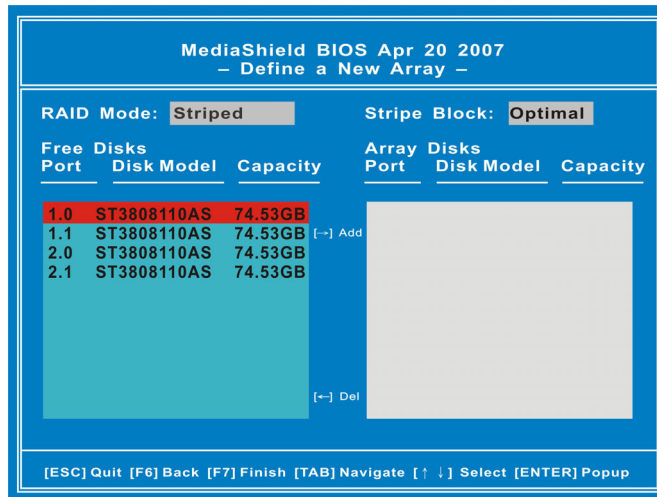
4. After all of the options are properly configured, press **<F7>**. A confirmation box will display as shown below. Hit **<Y>** to continue the RAID array creation.
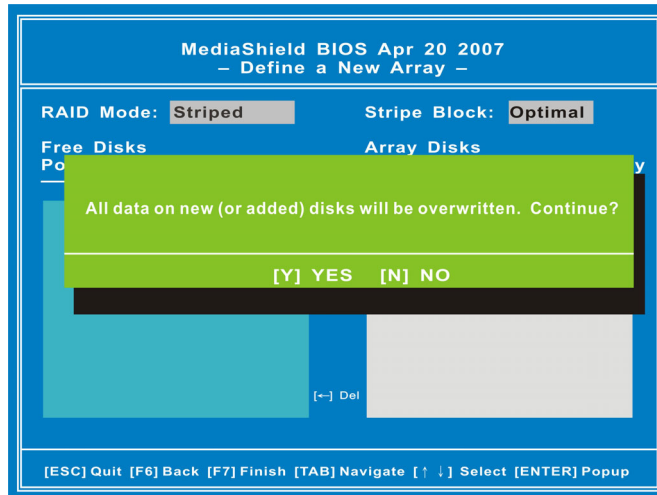
5. An alert box will appear as shown below. Press **<Y>** to clear the Master Boot Record and complete the RAID array creation.
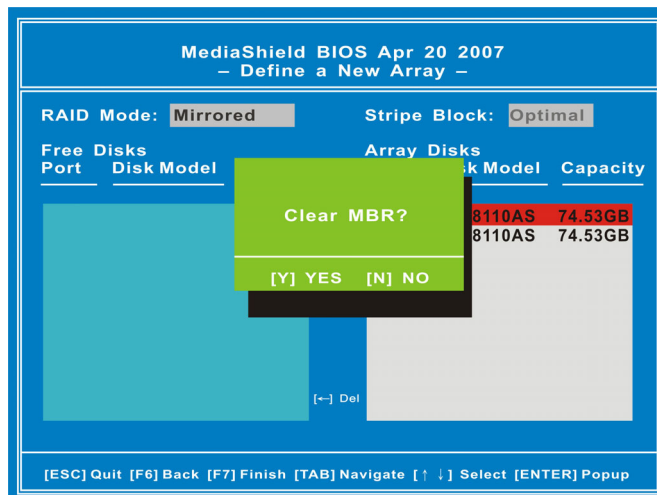
6. In the next page, you will see the "Array List" screen as shown below. You can press **<Enter>** to view the details.

```
        MediaShield BIOS Apr 20 2007
              – Array List –

   Boot   Status    Vendor   Array   Size
          Healthy   NVIDIA   STRIPE  298.12G




 [Ctrl-X] Exit   [↑ ↓] Select   [B] Set Bootable   [N] New Array   [ENTER] Detail
```

7. The "Array Detail" screen provides you all the information of the RAID array you created. You can press **<Enter>** to go back to the previous page. If you want to exit NVIDIA RAID Setup Utility, press **<Enter>** and then hit **<Ctrl-X>** to restart your computer.

```
        MediaShield BIOS Apr 20 2007
             – Array Detail –

 RAID Mode: Striped
 Stripe Width:   4              Stripe Block: 64K

     Port   Index   Disk Model          Capacity

     1.0    0       ST3808110AS         74.53GB
     1.1    1       ST3808110AS         74.53GB
     2.0    2       ST3808110AS         74.53GB
     2.1    3       ST3808110AS         74.53GB




      [R] Rebuild   [D] Delete   [C] Clear MBR   [ENTER] Return
```

8. When you see the screen below, please confirm the information about the RAID arrays you have created.


```
MediaShield ROM BIOS 9.85
Copyright (C) 2007 NVIDIA Corp.


Detecting arrays ...
0    Healthy   NVIDIA   STRIPE   298.12G


Press F10 to enter RAID setup utility ...
```
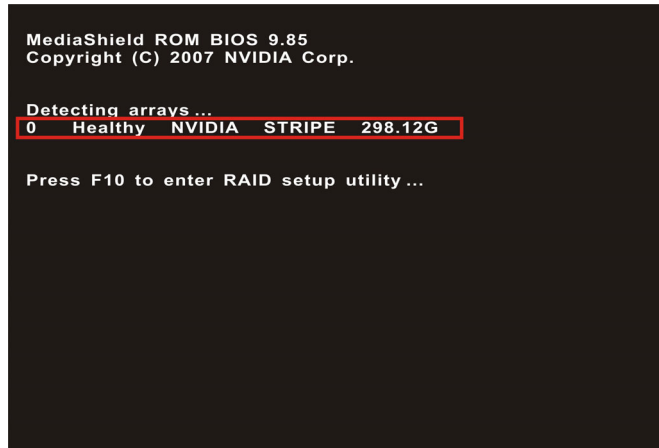
- ▪ **If you select a RAID Mode with wrong hard disk numbers…**

1. For example, if you select "Mirrored" configure four hard disks into your array disks, and then you press **<F7>** go to the next step.


```
MediaShield BIOS Apr 20 2007
— Define a New Array —

RAID Mode: Mirrored          Stripe Block: Optimal

Free Disks                   Array Disks
Port   Disk Model  Capacity  Port   Disk Model   Capacity


                             1.0    ST3808110AS  74.53GB
                      [→] Add 1.1    ST3808110AS  74.53GB
                             2.0    ST3808110AS  74.53GB
                             2.1    ST3808110AS  74.53GB




                      [←] Del

[ESC] Quit [F6] Back [F7] Finish [TAB] Navigate [↑ ↓] Select [ENTER] Popup
```
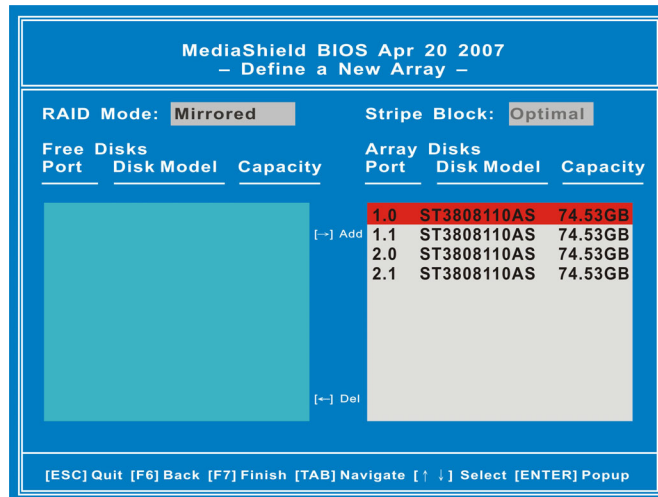
2. Then you will see an alert box to notify you that you selected an invalid number of disks. In a mirrored array, you can only configure two disks at one time. You must press **<Enter>** to go back to the main screen to reconfigure your options again.
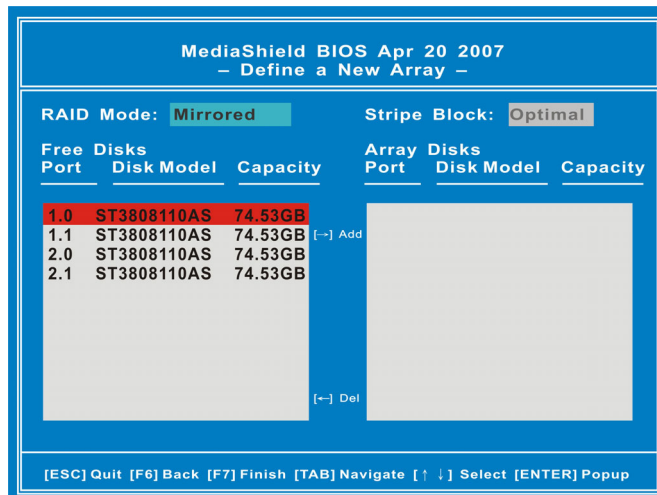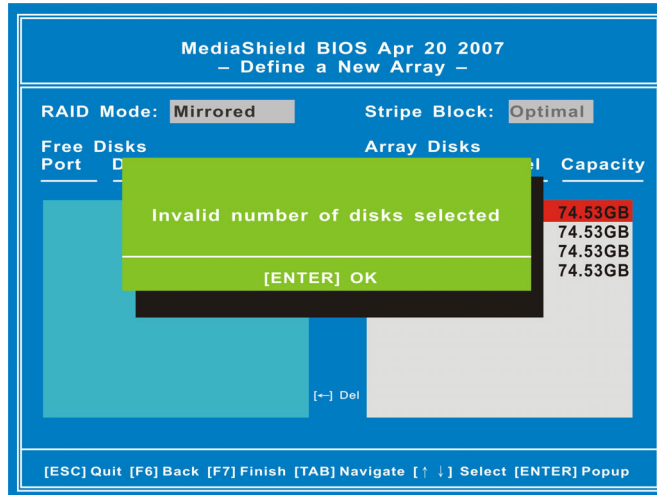
＊ The **RAID Introduction** to this manual explains disk requirements for each RAID configuration.

Deleting Array

1. If you want to delete an existing array, go to the "Array Detail screen as below. Press **<D>**.
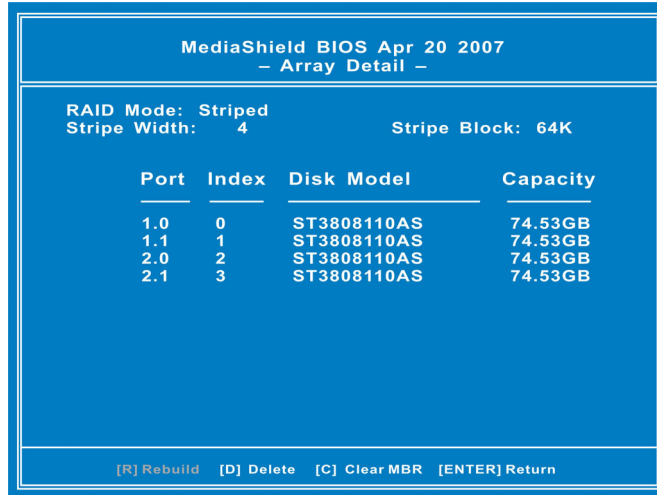
2. An alert box will display for your confirmation to delete the array. Press <Y> to delete.
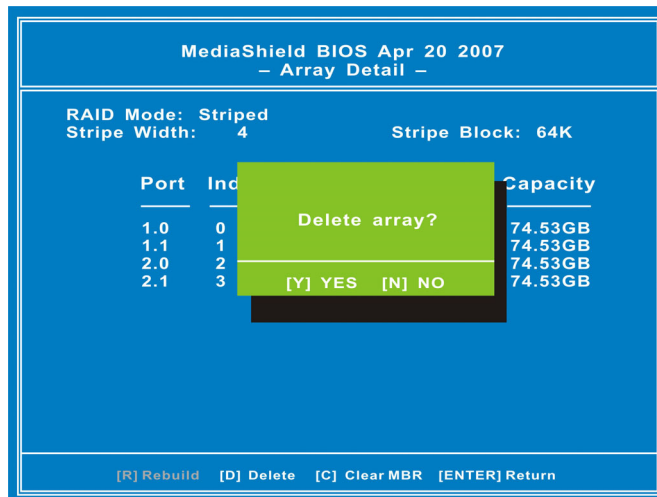
3. After the array is deleted successfully, you will return to the main screen where you can re-create a new array as shown below.
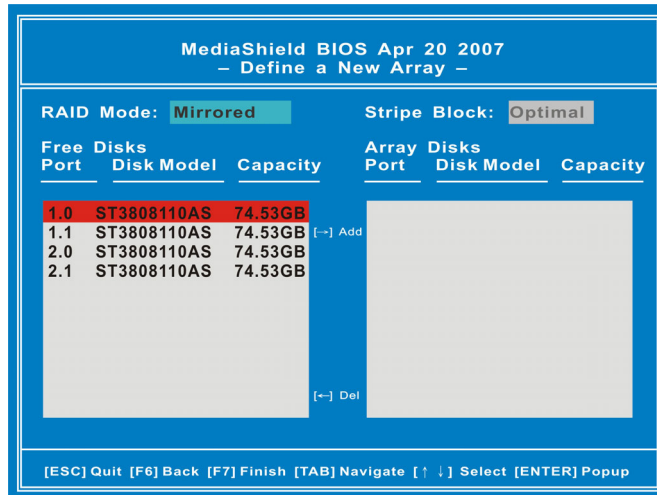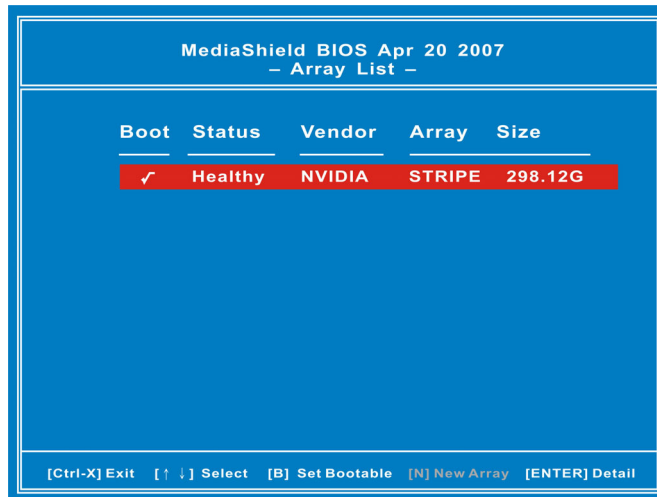
Configuring a Bootable Array

Use the up/down arrow keys to select an array. Then press **<B>** to specify the selected array as a bootable array. You will see a special symbol, "√", marked in the Boot item of the highlighted array.
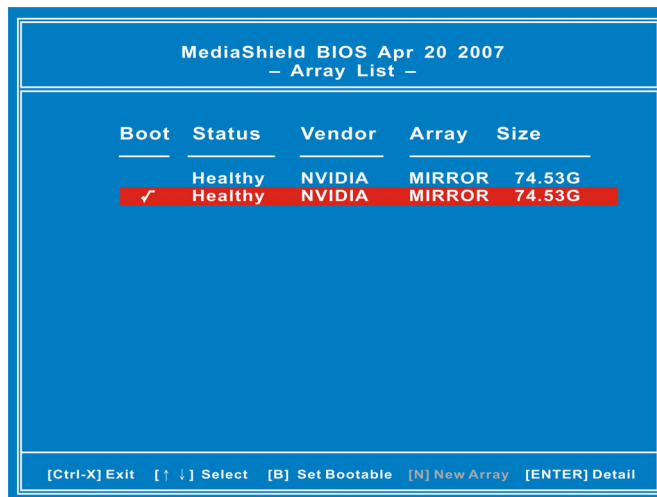
■ **When there is only one RAID array…**

```
        MediaShield BIOS Apr 20 2007
              – Array List –

    Boot   Status   Vendor   Array   Size

     √     Healthy   NVIDIA   STRIPE  298.12G




    [Ctrl-X] Exit  [↑ ↓] Select  [B] Set Bootable  [N] New Array  [ENTER] Detail
```

■ **When there are two RAID arrays or more, you can only select one.**

```
        MediaShield BIOS Apr 20 2007
              – Array List –

    Boot   Status   Vendor   Array   Size

           Healthy   NVIDIA   MIRROR  74.53G
     √     Healthy   NVIDIA   MIRROR  74.53G




    [Ctrl-X] Exit  [↑ ↓] Select  [B] Set Bootable  [N] New Array  [ENTER] Detail
```

Install Windows® XP OS onto your RAID HDDs

This section will explain how to install the Windows® XP operating system onto your RAID drives. The installation steps below will assume that your HDDs have already been attached to the SATA connectors, and your RAID arrays have already been configured using the NVIDIA RAID Setup Utility (NVIDIA RAID Setup Utility Configuration section).

Download the NVIDIA RAID driver from the Albatron website.

1. Go to the Albatron website: http://www.albatron.com.tw

2. Move your mouse pointer to the **"Product Info"** menu item and then click the **"Mainboard"** item in the drop-down menu.

3. Select your mainboard. The example used below is "NF 680i SLI" mainboard.

4. Click **"Driver"** as shown below on the left panel. Click the download icon to download the NVIDIA RAID driver (You should download the RAID driver according to your operating system). The picture below illustrates a selection for a system using a "Windows XP 32-bit Operating System".

5. Press the **"Save"** button to download the RAID zip file. You must unzip the file and save the files onto media that you can use on an existing storage device on your computer (e.g. floppy disk drive).

Install Windows® XP

1. During the Windows® XP installation, a "Windows Setup" screen will prompt you with "Press F6 if you need to install third party SCSI or RAID driver". Press **<F6>**.

Windows Setup

Press F6 if you need to install a third party SCSI or RAID driver...
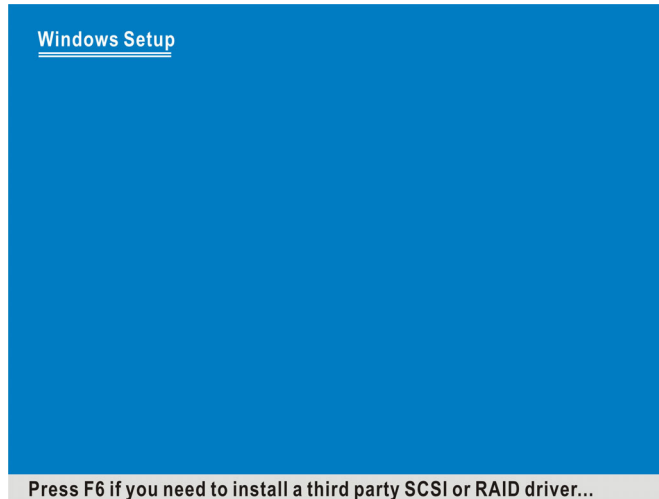
2. Press **<s>** when setup asks if you want to specify an additional device.

Windows Setup

Setup could not determine the type of one or more mass storage devices installed in your system, or you have chosen to manually specify an adapter. Currently, Setup will load support for the following mass storage device(s):

   <none>

   * To specify additional SCSI adapters, CD-ROM drives, or special
     disk controllers for use with Windows, including those for
     which you have a device support disk from a mass storage device
     manufacturer, press S.

   * If you do not have any device support disks from a mass storage
     device manufacturer, or do not want to specify additional
     mass storage devices for use with Windows, press ENTER.

S=Specify Additional Device   ENTER=Continue   F3=Exit

3. Insert the media which includes the "RAID Driver" into your computer. Press **<Enter>** to locate the appropriate OS device driver. You will install two drivers.

Windows Setup

Please insert the disk labeled

Manufacturer-supplied hardware support disk

into Drive A :

* Press ENTER when ready.

ENTER=Continue   ESC=Cancel   F3=Exit

4. Select the "NVIDIA RAID CLASS DRIVER (required)" and press **<Enter>** to locate this driver.

Windows Setup

You have chosen to configure a SCSI Adapter for use with Windows, using a device support disk provided by an adapter manufacturer.

Select the SCSI Adapters you want from the following list, or press ESC to return to the previous screen.

NVIDIA RAID CLASS DRIVER (required)
NVIDIA nForce Storage Controller (required)

ENTER=Select   F3=Exit
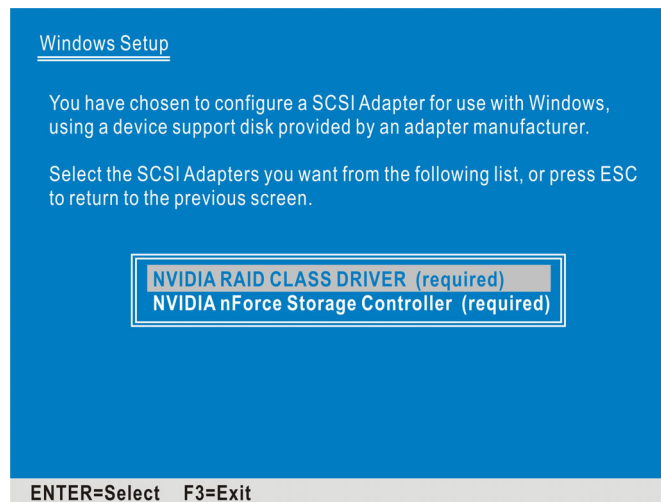
5. When you see the screen shown as below again, press **<s>** to download the second RAID driver.

Windows Setup

Setup could not determine the type of one or more mass storage devices installed in your system, or you have chosen to manually specify an adapter. Currently, Setup will load support for the following mass storage device(s):

   <none>

   * To specify additional SCSI adapters, CD-ROM drives, or special disk controllers for use with Windows, including those for which you have a device support disk from a mass storage device manufacturer, press S.

   * If you do not have any device support disks from a mass storage device manufacturer, or do not want to specify additional mass storage devices for use with Windows, press ENTER.

S=Specify Additional Device   ENTER=Continue   F3=Exit

6. Select the "NVIDIA nForce Storage Controller (required)" and also, press **<Enter>**.

Windows Setup

You have chosen to configure a SCSI Adapter for use with Windows, using a device support disk provided by an adapter manufacturer.

Select the SCSI Adapters you want from the following list, or press ESC to return to the previous screen.

      NVIDIA RAID CLASS DRIVER (required)
      NVIDIA nForce Storage Controller (required)

ENTER=Select   F3=Exit
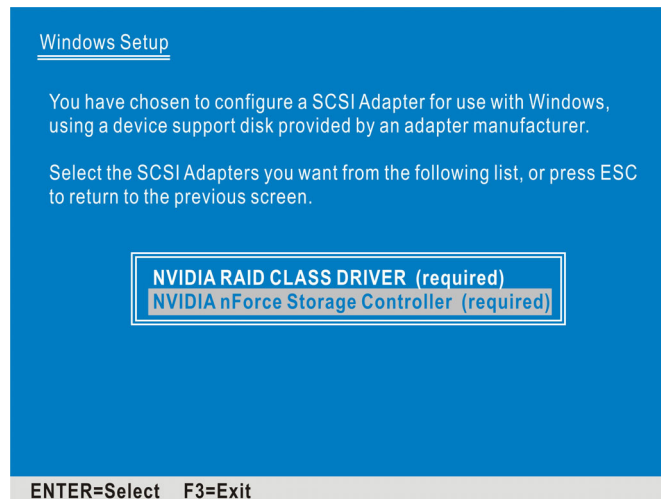
7. You have finished RAID drivers installation. Press <Enter> to continue the Windows® XP setup process.

Windows Setup

Setup could not determine the type of one or more mass storage devices installed in your system, or you have chosen to manually specify an adapter. Currently, Setup will load support for the following mass storage device(s):

   <none>

   * To specify additional SCSI adapters, CD-ROM drives, or special
     disk controllers for use with Windows, including those for
     which you have a device support disk from a mass storage device
     manufacturer, press S.

   * If you do not have any device support disks from a mass storage
     device manufacturer, or do not want to specify additional
     mass storage devices for use with Windows, press ENTER.

S=Specify Additional Device   ENTER=Continue   F3=Exit

8. Follow the setup instructions and select the partition and file system where you want to install the operating system files.

9. After setup examines your disks, it will copy files to the Windows® XP installation folders and restart the system. After the system reboots, the setup program will continue with the installation all the way to completion.

10. Wait until Windows® XP finishes installing devices, regional settings, networking settings, components, and any other remaining tasks. Reboot the system if you are asked to do so.

Install Windows® Vista OS onto your RAID HDDs

This section will explain how to install Windows® Vista operating system onto your RAID drives. The installation steps below will assume that your HDDs have already been attached to the SATA connectors, and your RAID arrays have already been configured using the NVIDIA RAID Setup Utility (NVIDIA RAID Setup Utility Configuration section).

Download the NVIDIA RAID driver from the Albatron website.

1. Go to the Albatron website: http://www.albatron.com.tw

2. Move your mouse pointer to the **"Product Info"** menu item and then click the **"Mainboard"** item in the drop-down menu.

3. Select your mainboard. The example used below is "NF 680i SLI" mainboard.

4. Click **"Driver"** as shown below on the left panel. Click the download icon to download the NVIDIA RAID driver (You should download the RAID driver according to the operating system). The picture below illustrates "Windows Vista 32-bit Operating System".

5. Press the **"Save"** button to download the RAID zip file. You must unzip the file and save the files to media that you can use on an existing storage device on your computer (floppy disk drive, or USB Flash Drive).

Install Windows® Vista

1. During a Windows® Vista installation, there will be an item **"Load Driver"**. Click on it and then insert the media containing the RAID Driver files into your computer. You will install two drivers.
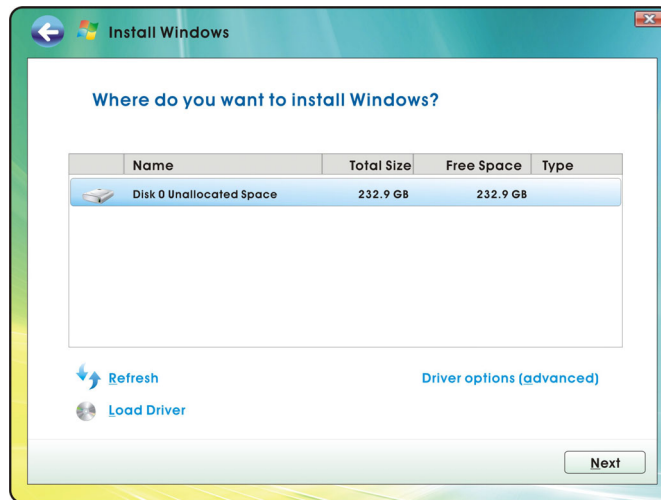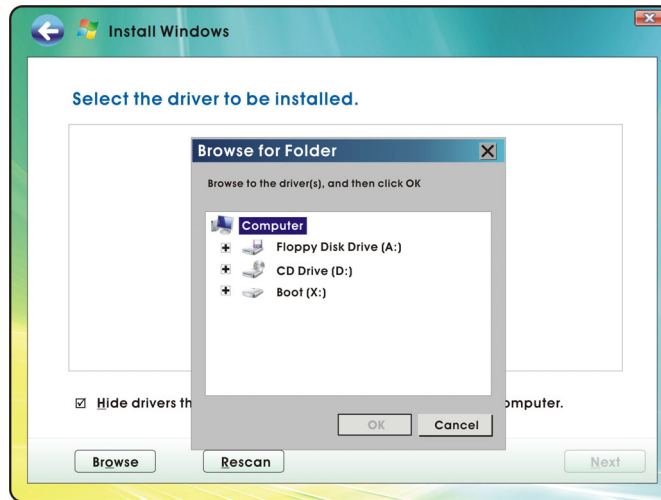

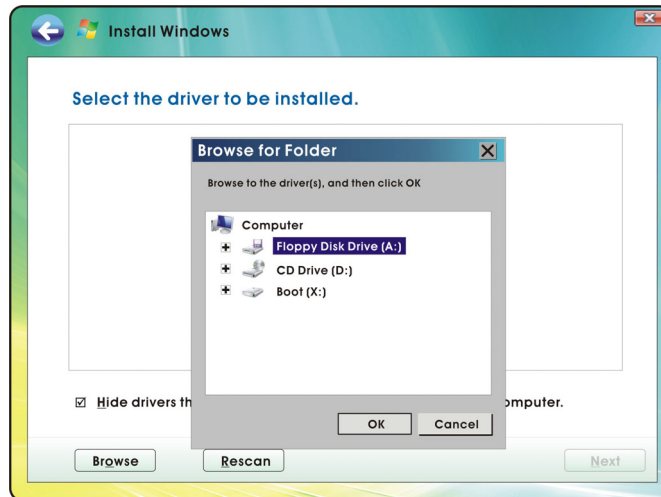2. Click on **"Browse"** to browse into the folders of the media to locate the folder with the files.
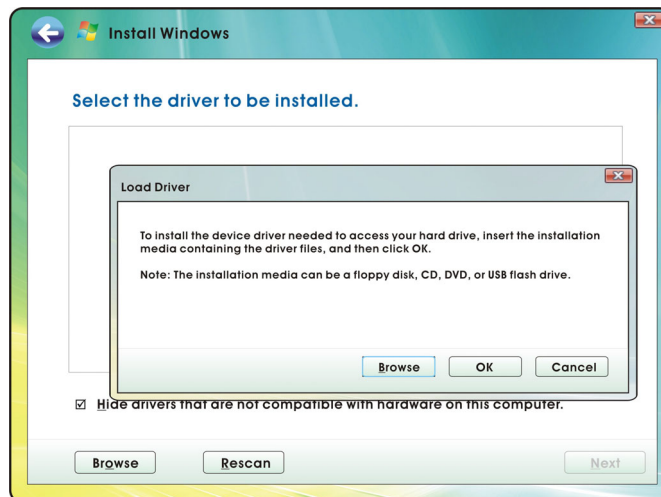
3. Select the media which includes the RAID Drivers.

4. The example here is "floppy disk drive". Make sure you have inserted the floppy disk including the RAID Drivers. Select **"Floppy Disk Drive(A:)"**. Click **"OK"** to load the RAID Drivers. The system will scan for the drivers automatically.
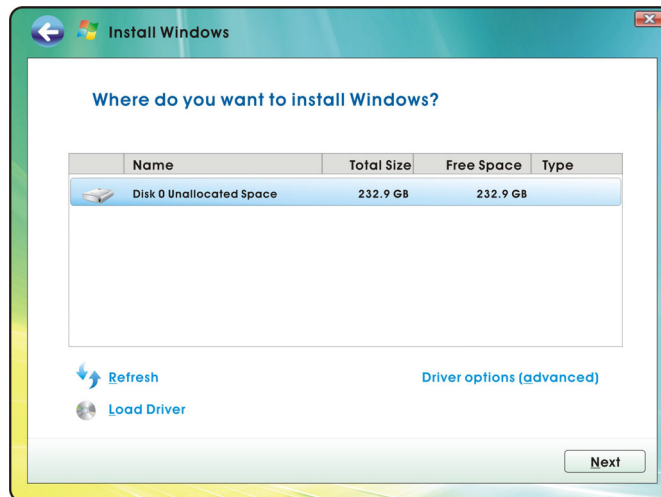
5. Select the **"NVIDIA nForce RAID Controller"** and click **"Next"** to locate this driver. Please wait until finished.
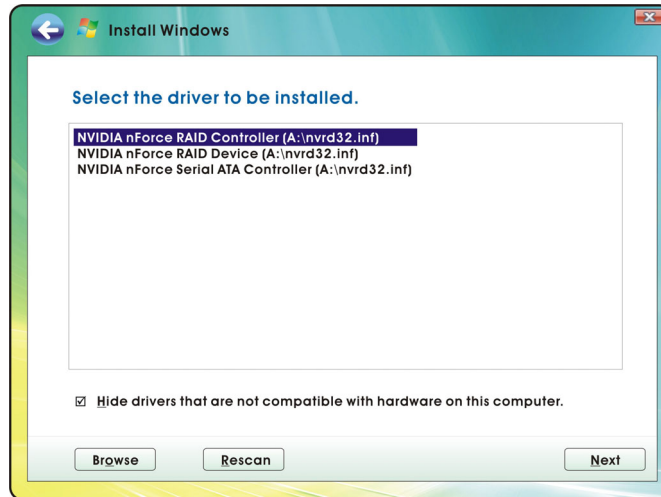
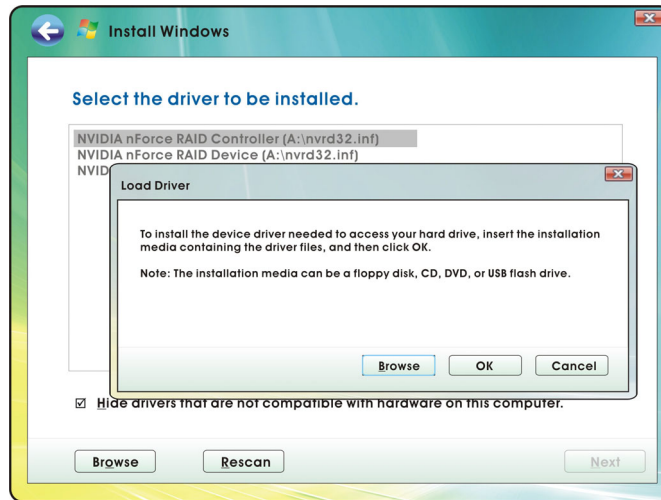6. When you go back to the screen shown as below, click **"Load Driver"** again to download the second RAID driver.
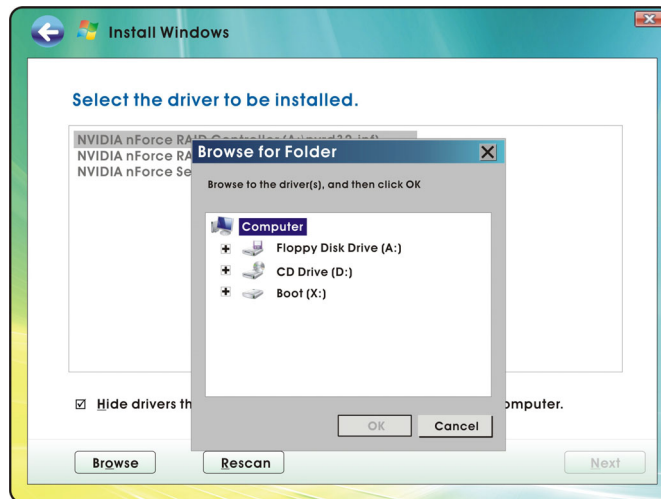
7. Click on **"Browse"** to browse into the folders of the media to locate the folder with the files.

8. Select the media which includes the RAID Drivers.

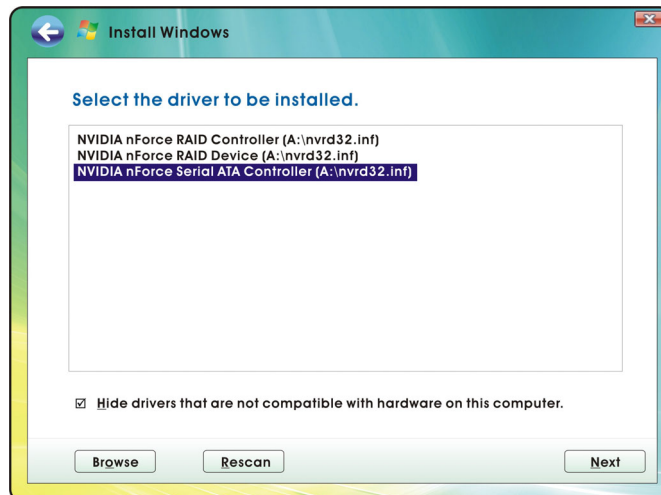9. Select **"Floppy Disk Drive(A:)"** and click **"OK"** to load the RAID Drivers. The system will rescan for the drivers automatically.
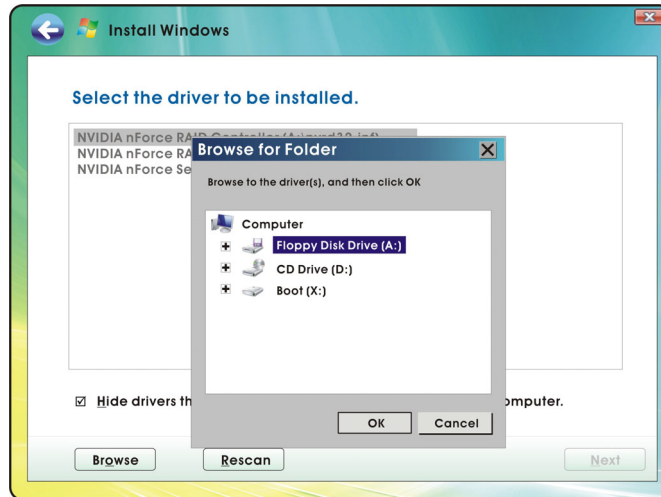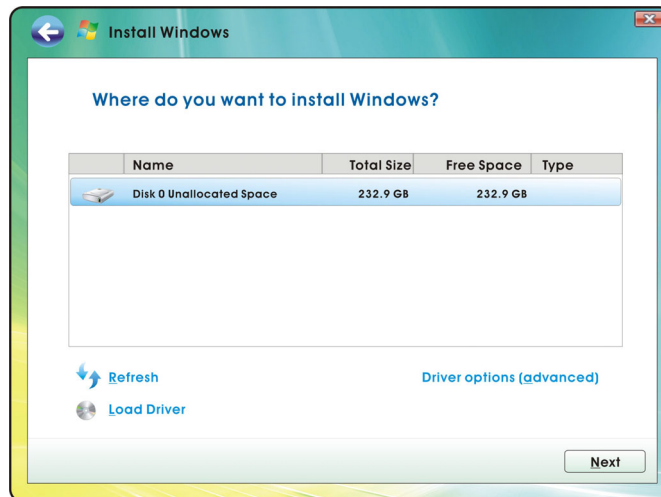

10. Select the **"NVIDIA nForce Serial ATA Controller"** and click **"Next"** to continue. Please wait until finished.

11. You will return to the "Install Windows" screen to continue with the installation. Follow the setup instructions and select the partition where you want to install the operating system files.

12. After setup examines your disks, it will copy files to the Windows® Vista installation folders and restart the system. After the system is rebooted, the setup program will continue with the installation all the way to completion.

13. Wait until Windows® Vista finishes installing devices, regional settings, networking settings, components, and any other remaining tasks. Reboot the system if you are asked to do so.
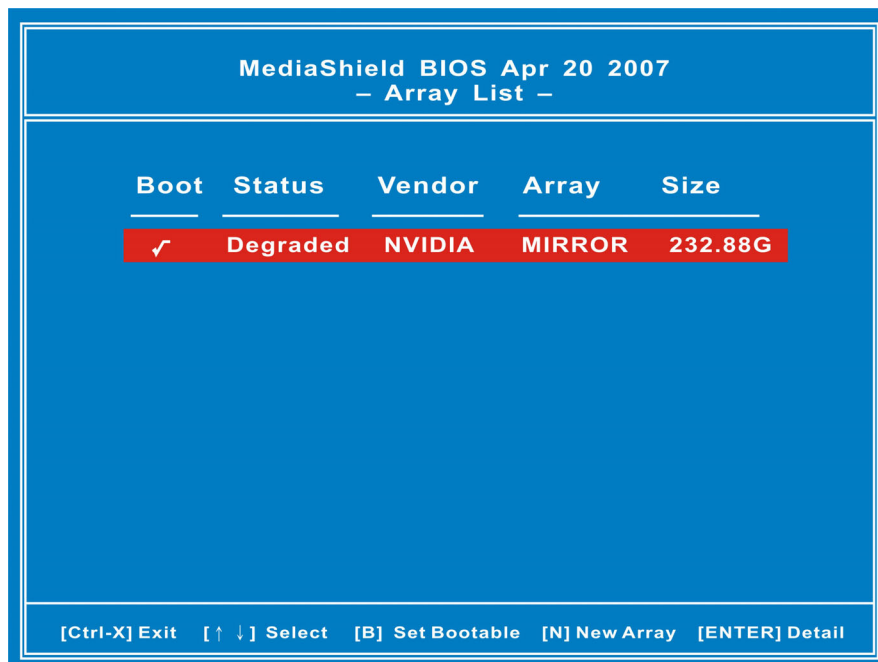
Rebuilding a RAID Mirrored Array

This section will illustrate how to replace a failed drive with a new one, and rebuild the array to restore lost data on the newly installed drive. Rebuilding only applies to fault-tolerant arrays which are RAID 1, RAID 0+1, and RAID 5 arrays.

1. Before rebuilding an array, you must connect new hard disk(s) onto your computer.

2. Power on your computer. When the system boots up during the POST (Power-On Self Test), you will be given an opportunity to enter the NVIDIA RAID Setup Utility when the screen prompts you with the following message.
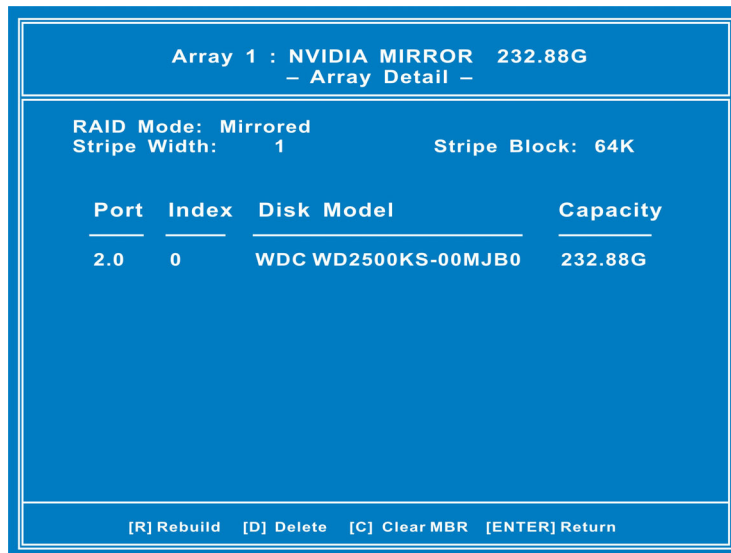
    "Press ＜F10＞ to enter RAID setup utility…"

3. Press **<F10>** key to enter the NVIDIA RAID Setup Utility (note that you will only have a short window of time to press **<F10>** before the system continues the next step of the boot process).

4. Go to the screen shown as below. Press **<Enter>**.


```
            MediaShield BIOS Apr 20 2007
                   – Array List –


    Boot   Status    Vendor    Array     Size

     √    Degraded   NVIDIA    MIRROR   232.88G








[Ctrl-X] Exit   [↑ ↓] Select   [B] Set Bootable   [N] New Array   [ENTER] Detail
```

5. You should see the existing RAID array on your system. Press **<R>** to rebuild the array.

```
           Array 1 : NVIDIA MIRROR   232.88G
                   – Array Detail –

   RAID Mode: Mirrored
   Stripe Width:    1            Stripe Block: 64K


     Port  Index  Disk Model              Capacity
     ____  _____  _____              _____
     2.0    0     WDC WD2500KS-00MJB0     232.88G








         [R] Rebuild   [D] Delete   [C] Clear MBR   [ENTER] Return
```
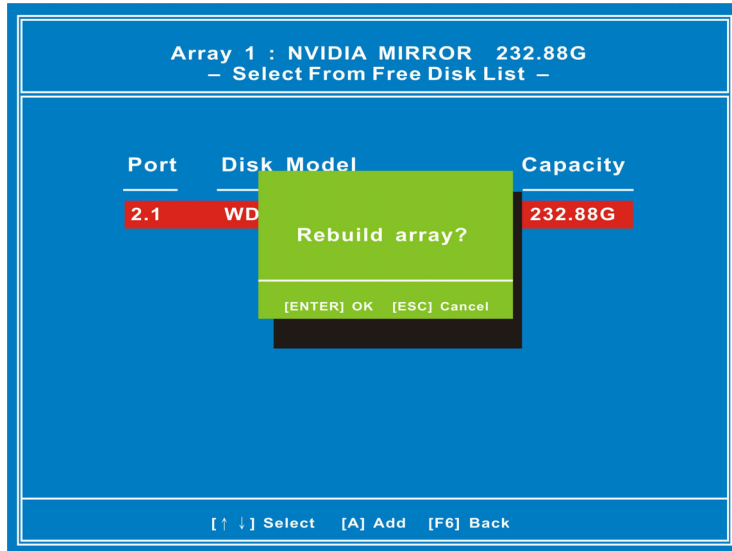
6. The next screen will display as below. Use up/down arrow keys to select a free disk. Press **<A>** to continue.

```
           Array 1 : NVIDIA MIRROR   232.88G
                – Select From Free Disk List –



     Port    Disk Model              Capacity
     ____    _____              _____
     2.1     WDC WD2500KS-00MJB0     232.88G









         [↑ ↓] Select   [A] Add   [F6] Back
```
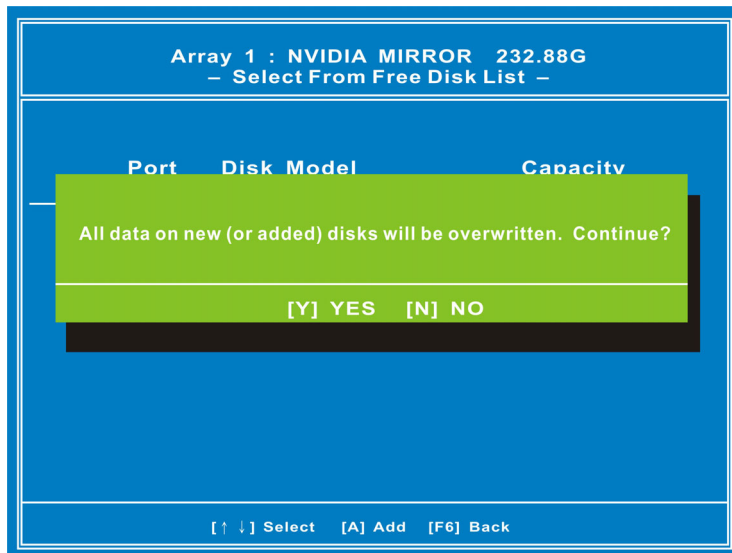
65
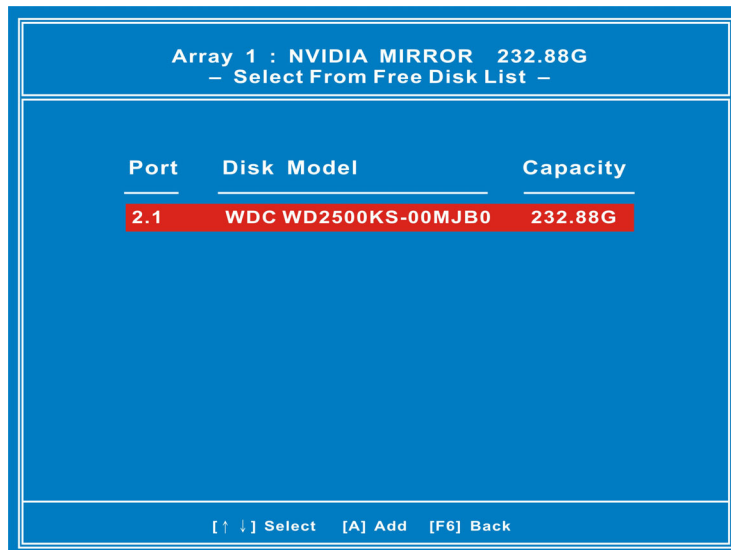
7. An alert box will display for your confirmation to rebuild array. Press **<Enter>** to go to the next step.

```
          Array 1 : NVIDIA MIRROR   232.88G
             – Select From Free Disk List –


   Port    Disk Model                  Capacity

   2.1      WD                            232.88G
                  Rebuild  array?


            [ENTER] OK   [ESC] Cancel




            [↑ ↓] Select    [A] Add   [F6] Back
```

8. A confirmation box will display as shown below. Hit **<Y>** to continue rebuilding the RAID array.

```
          Array 1 : NVIDIA MIRROR   232.88G
             – Select From Free Disk List –


   Port    Disk Model                  Capacity

   All data on new (or added) disks will be overwritten.  Continue?


                   [Y] YES    [N] NO




            [↑ ↓] Select    [A] Add   [F6] Back
```

66

9. You have successfully finished the setup of rebuilding an array in the "NVIDIA RAID Setup Utility". Press **<Ctrl-X>** to restart your computer.

```
              MediaShield BIOS Apr 20 2007
                    – Array List –


        Boot   Status    Vendor    Array    Size


         ✓     Rebuild    NVIDIA   MIRROR   232.88G












[Ctrl-X] Exit   [↑ ↓] Select   [B] Set Bootable   [N] New Array   [ENTER] Detail
```
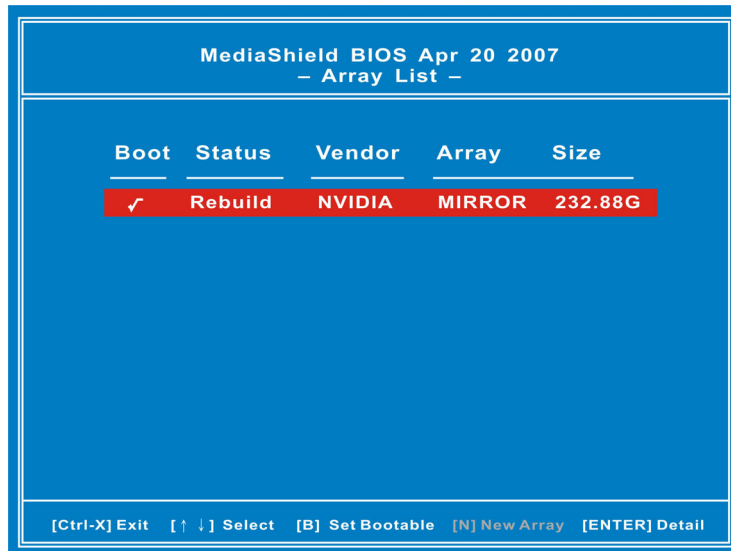
10. During the boot process, you will see the screen below. Confirm the "Rebuild" information as shown below.

```
MediaShield ROM BIOS 9.85
Copyright (C) 2007 NVIDIA Corp.


Detecting arrays ...
0    Rebuild   NVIDIA   MIRROR   232.88G

Press F10 to enter RAID setup utility ...
```
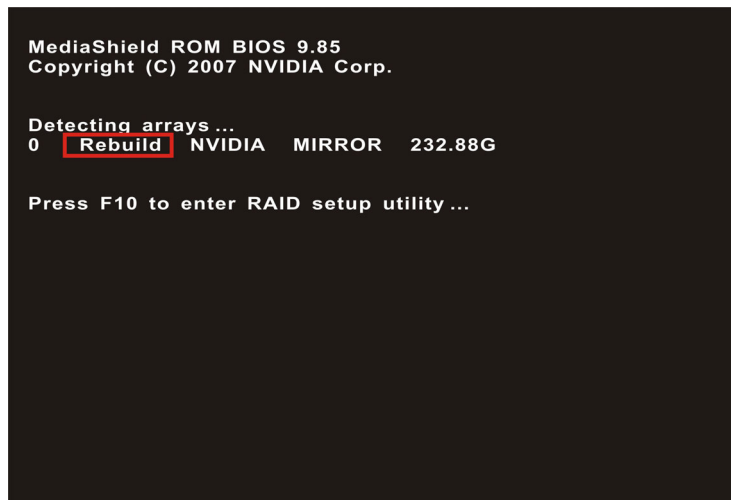
11. The Rebuild process is automatic. You can check of the Rebuild in the following steps. Go to to "***Start → All Programs → NVIDIA Corporation → NVIDIA Control Panel → Storage***" under Windows.
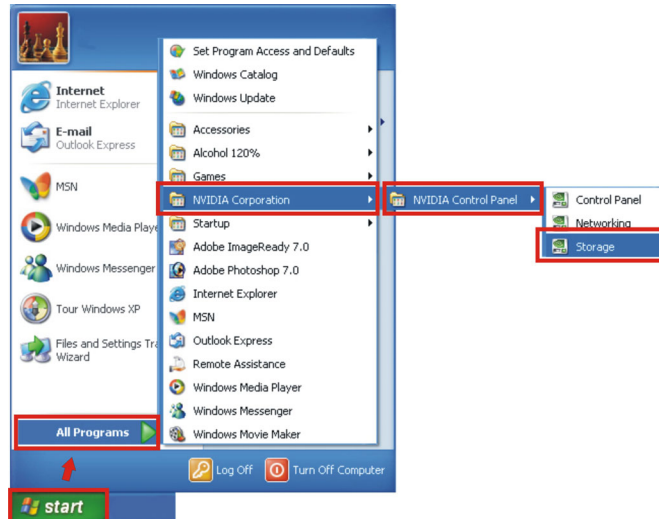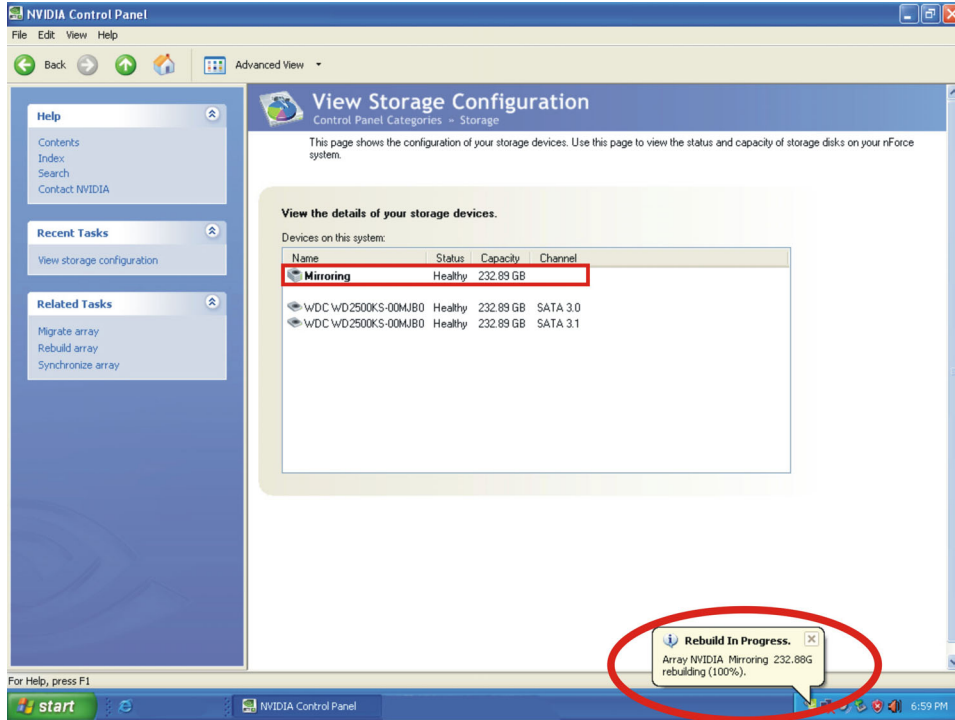

12. A notification box will display to notify you rebuilding the array is started. Rebuilding the array will take a while. Please wait until finished.
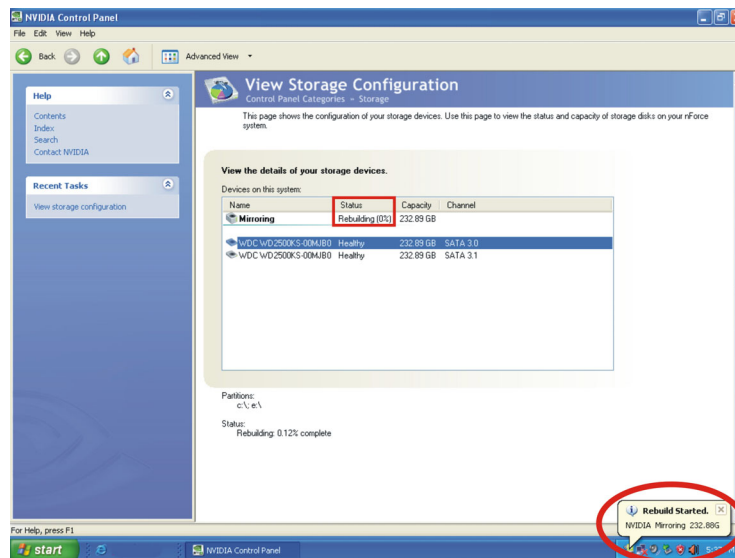
13. When the rebuilding is finished, make sure the "Status" item for your Rebuild Array shows "Healthy". You have now successfully rebuilt the RAID array.

Appendix III: SLI (Scalable Link Interface) Setup

Introduction

NVIDIA SLI (Scalable Link Interface) is a revolutionary technology that allows two NVIDIA SLI graphics cards to work together to deliver incredible 3D graphics performance.

Your new motherboard can support up to three PCI Express graphics cards, two linked using SLI and one dedicated to CPU physics.

Determine Component and Operating System Needs

To build an NVIIDA SLI system, you are going to need the following components:

- Two NVIDIA SLI-Ready certified PCI Express graphics cards
- An NVIDIA SLI-Ready power supply
- Microsoft® Windows® XP operating system

For a complete list of certified components and a matrix to determine the power supply required for your particular graphic cards, go to:

http://www.slizone.com/content/slizone/build.html.

While NVIDIA recommends an SLI-Ready power supply, the following table provides some general power supply recommendations based on testing performed in the NVIDIA SLI validation lab.

Recommended Power Supplies

NVIDIA SLI System Type	Minimum Recommended PCI Express Power Supply
High-End: GeForce 6800 Ultra	500W–550W, +12V @ 30A
Mid-Range: GeForce 6800 GT or 6800	420W–480W, +12V @ 25A
Entry-Level: GeForce 6600 GT	350W–420W, +12V @ 20A

If the power supply specifies two 12V windings (i.e. 12V1 and 12V2), add these numbers together to check against the specifications described above.

For systems with the 6800 Ultra or 6800 GT, please make sure the power supply also contains PCI Express auxiliary power supply connectors. If your power supply does not have a PCI

Express auxiliary connector (6-pin connector), please contact your graphics board partner for an HDD-to-PCI Express power adaptor.

The NVIDIA SLI power supply recommendations are based on the following test configurations:

■ High-End NVIDIA SLI Configuration:

➤ Dual GeForce 6800 Ultra Graphics cards

➤ Athlon 64 939-pin CPU or Intel Xeon

➤ Two or more HDD, including RAID 0,1, 0+1 or 5 configurations

➤ Two optical drives

➤ PCI sound card

■ Mid-Range NVIDIA SLI Configuration:

➤ Dual GeForce 6800 or GeForce 6800 GT Graphics cards

➤ Athlon 64 939-pin CPU

➤ Single HDD

➤ Two optical drives

➤ PCI sound card

■ Entry-Level NVIDIA SLI configuration:

➤ Dual GeForce 6600 GT Graphics cards

➤ Athlon 64 939-pin CPU

➤ Single HDD

➤ One optical drive

For a list of certified power supplies, go to:
http://www.slizone.com/content/slizone/build.html.

Install Your NVIDIA SLI-Ready Parts

Now that you have obtained the necessary NVIDIA SLI-Ready parts, it is time to configure the system. This procedure assumes you have already installed the motherboard. The NVIDIA nForce 680i SLI motherboard has three PCI Express slots. The two outer slots (black) are used for the SLI configuration. The middle slot (blue) is used for CPU physics and is not configured into the SLI configuration.
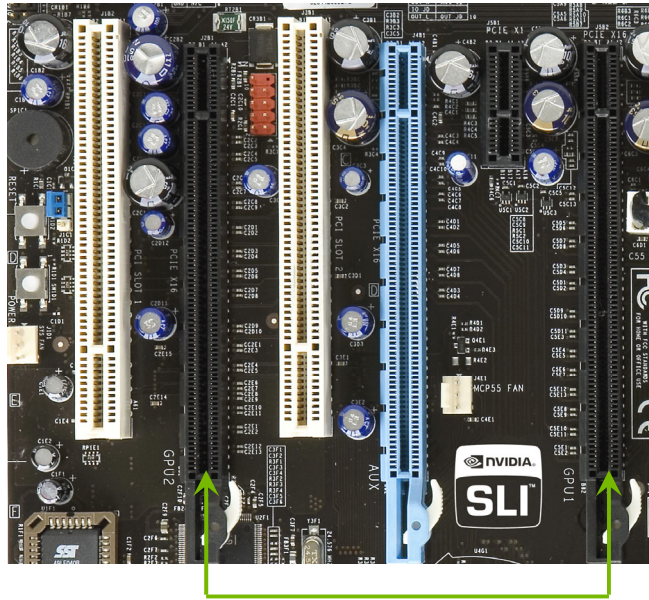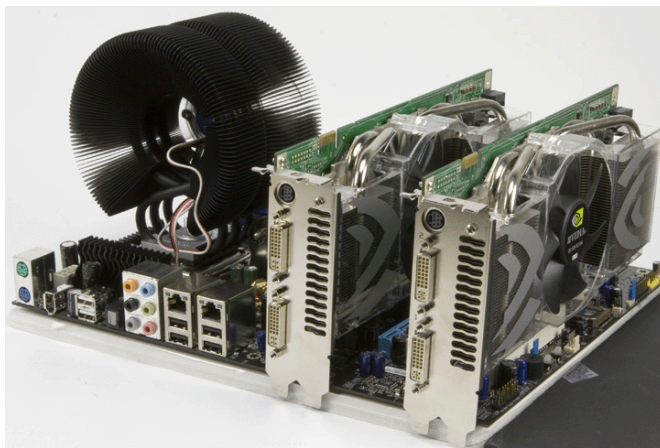
SLI graphics cards in these slots

Use the following procedure to build your NVIDIA SLI-Ready PC system:
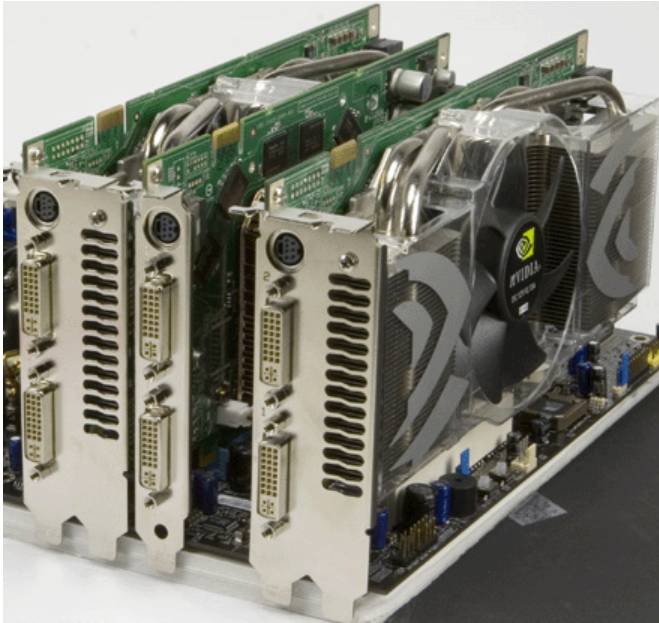
1. Install two SLI-Ready graphic cards into the two outer black PCI Express x16 slots on the motherboard. Be sure to seat the graphic cards into the connectors.

Two SLI graphics cards installed in the outer two (block) PCI Express slots on the motherboard.

Note the blue PCI Express slot is empty.

Three PCI Express graphics cards installed. Only the two outer cards will be SLI'ed using the SLI Connector shipped in your motherboard kit.

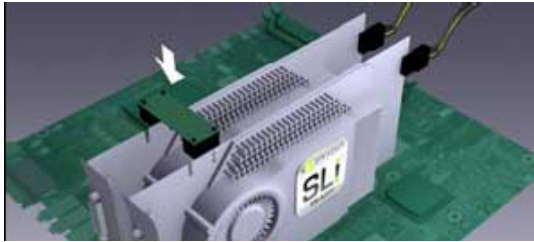2. Connect the PCI Express supplementary power connectors from the system power supply to each of the graphic cards:
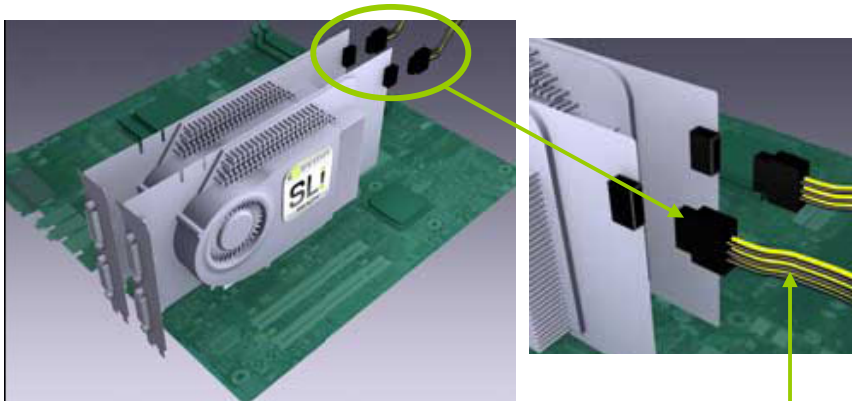
From Power Supply

3. Install the NVIDIA SLI connector across the two outer graphics cards as shown below. Each SLI-Ready graphics card has an SLI *finger* on the upper side of the card.
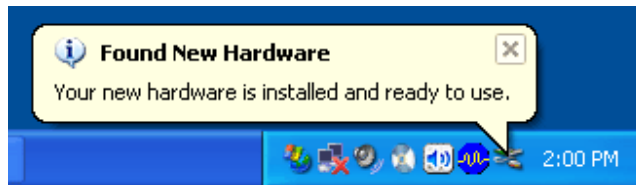

Install the SLI connector
onto the two outer cards.

Install NVIDIA SLI Software

Upon power up, the operating system recognizes the new NVIDIA SLI-Ready components and displays the **Found New Hardware** message.


Your motherboard shipped with a set of drivers that you must install. Once these drivers are installed, reboot your system.

As part of the NVIDIA Unified Driver Architecture, NVIDIA drivers include a full set of controls for SLI systems.

Go to http://www.slizone.com/content/slizone/drivers.html and download the latest SLI graphics drivers.

With the new drivers installed, reboot your system. After this reboot, the following SLI capable system message displays to let you know that your hardware and software components have been installed properly.
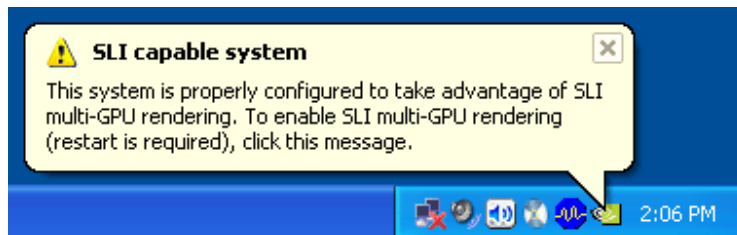
Click on this message to enable your NVIDIA SLI.
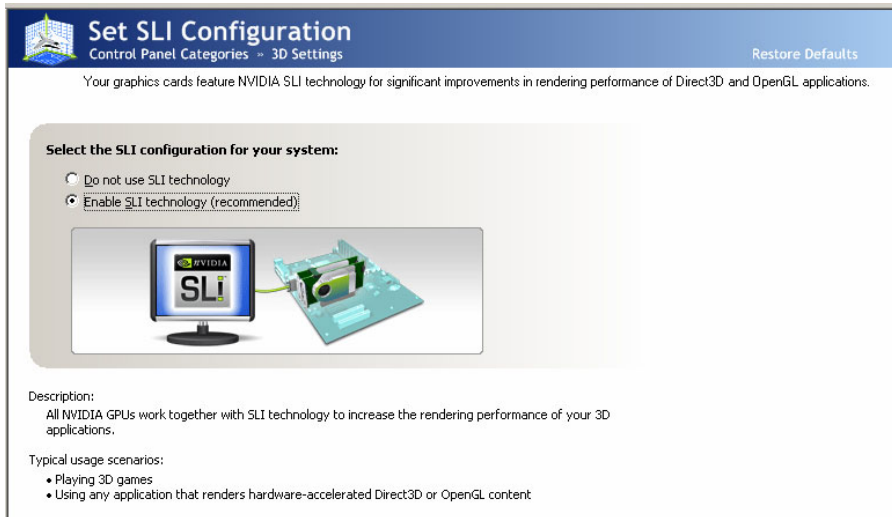
Enable NVIDIA SLI

At this point, you need to enable NVIDIA SLI. You can do this either by clicking on the **SLI capable system** balloon or by going to the NVIDIA Control Panel.

To launch the NVIDIA Control Panel, select Start ➤ All Programs ➤ NVIDIA Corporation ➤ NVIDIA Control Panel. Click on the 3D Settings icon.
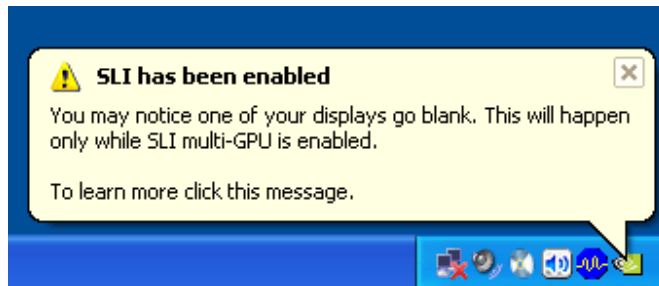
Select Set SLI configuration from under Performance.

Click Enable SLI technology (recommended) and click Apply.

The system reboots to apply the setting and display the following message upon reboot:

Congratulations on your new NVIDIA SLI-Ready PC system.